ERRATA SHEET

Digital SAT® MATH PRACTICE QUESTIONS

First Edition

The errata for Digital SAT® Math Practice Questions are shown in this pdf. This book had multiple print runs; this errata is applicable to print runs before May 16, 2023. The consecutive print runs have corrected these errors. In case you do not find the below errors in your book, it is because they have been corrected.

Page No.	Question No.	Answer No.	Error in the book	Corrected
98	125		$f(x) = (x - 4)(x + 2)$ and $g(x) = 4x - 17$ If $x > 0$ then for what value of x is the statement $f(x) - g(x) = 0$ true?	$f(x) = (x - 4)(x + 2)$ and $g(x) = 4x - 17$ For what value of x is the statement $f(x) - g(x) = 0$ true?
108		125	the value of x that makes $f(x) - g(x) = 0$, plug each equation of f and g. This yields $(x - 4)(x + 2) - (4x - 17) = 0$. Using the distributive property	the value of x that makes $f(x) - g(x) = 0$, plug each equation of $f(x)$ and $g(x)$. This yields $(x - 4)(x + 2) - (4x - 17) = 0$. Using the distributive
114		154	**Key Explanation:** Substituting the value of $f(x)$ to equation $f(x) = \left(\frac{x^2+x-12}{(x+4)}\right)^2$ yields $25 = \left(\frac{x^2+x-12}{(x+4)}\right)^2$. Getting the square root of both sides of the equation yields $\sqrt{25} = \sqrt{\left(\frac{x^2+x-12}{x+4}\right)^2}$ or $\pm 5 = \frac{x^2+x-12}{(x+4)}$. Factoring the right side of the equation yields $\pm 5 = \frac{(x+4)(x-3)}{x+4}$ or $\pm 5 = x - 3$. Equating the right side of the equation to both values of the left side yields $5 = x - 3$ and $-5 = x - 3$. Solving for x in both equations yields $x = 8$ and $x = -2$. Since $x > 0$, then $x = 8$. Therefore, the value of $-x$ is -8.	**Key Explanation:** -8 is the correct answer. Substituting the value of $f(x)$ to equation $f(x) = \left(\frac{x^2+x-12}{(x+4)}\right)^2$ yields $25 = \left(\frac{x^2+x-12}{(x+4)}\right)^2$. Getting the square root of both sides of the equation yields $\sqrt{25} = \sqrt{\left(\frac{x^2+x-12}{x+4}\right)^2}$ or $\pm 5 = \frac{x^2+x-12}{(x+4)}$. Factoring the right side of the equation yields $\pm 5 = \frac{(x+4)(x-3)}{x+4}$ or $\pm 5 = x - 3$. Equating the right side of the equation to both values of the left side yields $5 = x - 3$ and $-5 = x - 3$. Solving for x in both equations yields $x = 8$ and $x = -2$. Since $x > 0$, then $x = 8$. Therefore, the value of $-x$ is -8.
115		155	**Key Explanation:** The answer is 0. To find the number of solutions a function has, use the discriminant formula $b^2 - 4ac$. In this function $a = 2$, $b = -3$, $c = 5$. The discriminant therefore is $(-3)^2 - 4(2)(5) = 9 - 4 = -31$. If the discriminant is a negative number, this indicates that the function has no real solutions.	**Key Explanation:** The answer is 0. To find the number of solutions a function has, use the discriminant formula $b^2 - 4ac$. In this function $a = 2$, $b = -3$, $c = 5$. The discriminant therefore is $(-3)^2 - 4(2)(5) = 9 - 40 = -31$. If the discriminant is a negative number, this indicates that the function has no real solutions.

<table>
<tr><th>Page No.</th><th>Question No.</th><th>Answer No.</th><th>Error in the book</th><th>Corrected</th></tr>
<tr><td>116</td><td></td><td>162</td><td>Key Explanation: The y–intercept of a line is given when $x = 0$. Substituting 0 for x in the given equation yields $y = -(6)^\circ - 1$. Simplifying the equation yields –2.</td><td>Key Explanation: –2 is the correct answer. The y–intercept of a line is given when $x = 0$. Substituting 0 for x in the given equation yields $y = -(6)^\circ - 1$. Simplifying the equation yields –2.</td></tr>
<tr><td>123</td><td></td><td>169</td><td>Key Explanation: Choice B is correct. Since there are 36 kids in the camp and two–thirds are girls, there are a total of $\frac{2}{3}\times 36 = 24$ girls at the Statistics camp. Of the 24 girls, three–fourths are under 5.5 feet. This means that $\frac{3}{4}\times 24 = 18$ girls are under 5.5 feet.</td><td>Key Explanation: 18 is correct. Since there are 36 kids in the camp and two–thirds are girls, there are a total of $\frac{2}{3}\times 36 = 24$ girls at the Statistics camp. Of the 24 girls, three–fourths are under 5.5 feet. This means that $\frac{3}{4}\times 24 = 18$ girls are under 5.5 feet.</td></tr>
<tr><td>124</td><td></td><td>173</td><td>Key Explanation: Assuming that the daughter's current age is x and Gina's current age is $3x$
<table>
<tr><th></th><th>Now</th><th>Five years from now</th></tr>
<tr><td>Gina's age</td><td>$3x$</td><td>$3x + 5$</td></tr>
<tr><td>Daughter's age</td><td>x</td><td>$x + 5$</td></tr>
</table>
Using the ratio of their ages 5 years from now yields $\frac{3x+5}{x+5}=\frac{7}{3}$. Performing cross multiplication on yields $9x + 15 = 7x + 35$. Subtracting $7x$ and 15 from both sides of the equation yields $x = 10$. Therefore, Gina's daughter is 10 years old.</td><td>Key Explanation: Assuming that the daughter's current age is x and Gina's current age is $3x$
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Using the ratio of their ages 5 years from now yields $\frac{3x+5}{x+5}=\frac{7}{3}$. Performing cross multiplication on yields $9x + 15 = 7x + 35$. Subtracting $7x$ and 15 from both sides of the equation yields $2x = 20$. Dividing 2 from both sides of the equation yields $x = 10$. Therefore, Gina's daughter is 10 years old.</td></tr>
<tr><td>127</td><td>183</td><td></td><td>There was a sale on sofas at a furniture store for 60% off the original price of any sofa, with an additional 40% off y our entire purchase if you buy a matching armchair for a fixed price of $450. Which expression represents the total amount you need to pay if you buy a sofa that is originally $s and a matching armchair?</td><td>There was a sale on sofas at a furniture store for 60% off the original price of any sofa, with an additional 40% off your entire purchase if you buy a matching armchair for a fixed price of $450. Which expression represents the total amount you need to pay if you buy a sofa that is originally $s and a matching armchair?</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>131</td><td></td><td>188</td><td>Key Explanation: The price increases by 120%. Hence, the new price will be 220% of the original price. Multiplying 2.2 to the original price yields 2.2×24 or 52.80. The price of the new dress will be $52.80.</td><td>Key Explanation: $52.80 is the correct answer. The price increases by 120%. Hence, the new price will be 220% of the original price. Multiplying 2.2 to the original price yields 2.2×24 or 52.80. The price of the new dress will be $52.80.</td></tr>
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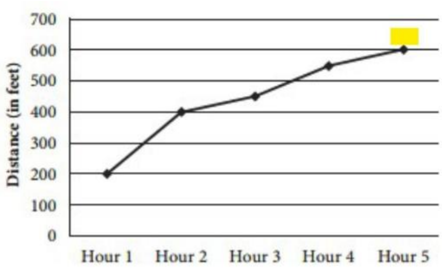
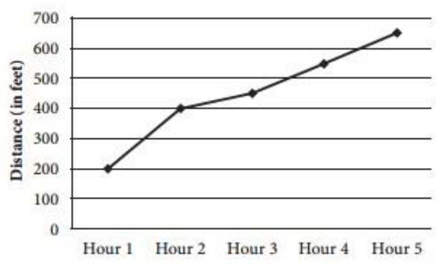
<tr><td>137</td><td></td><td>205</td><td>Key Explanation: The correct answer $\frac{2}{3}$.
The mean of the data set is given by $\frac{\textit{sum of the values}}{\textit{no. of the values}}$. The sum of the 12 values is $(13 \times 1) + (14 \times 2) + (15 \times 5) + (17 \times 2) + (18 \times 1) + (20 \times 1) = 188$. The mean would therefore be $\frac{188}{12} = 15\frac{2}{3}$ or 15.667. The median of 12 data is given by the average of the 6th and the 7th data, which would be 15. The difference between the mean and the median would be $\left(15\frac{2}{3} - 15\right) = \frac{2}{3}$.</td><td>Key Explanation: The correct answer $\frac{8}{3}$.
The mean of the data set is given by $\frac{\textit{sum of the values}}{\textit{no. of the values}}$. The sum of the 12 values is $(13 \times 1) + (14 \times 2) + (15 \times 4) + (17 \times 2) + (18 \times 1) + (20 \times 1) = 173$. The mean would therefore be $\frac{173}{11} = 15\frac{8}{3}$ or 15.727. The median of 11 data is given by the average of the 6th data, which would be 15. The difference between the mean and the median would be $\left(15\frac{8}{3} - 15\right) = \frac{8}{3}$.</td></tr>
<tr><td>138</td><td></td><td>206</td><td>Key Explanation: Choice A is correct.
A standard deviation is a measure of how dispersed the data is with respect to the mean. The mean in Data Set A is $\frac{13+14+14+15+15+15+15+15+17+17+18+20}{12}$ = 15.67. The mean in Data Set B is $\frac{14+14+15+15+15+15+15+17+17+17+18}{11}$ = 15.63. Looking at the charts, the data in Set A is more dispersed from its mean compared to the data in Set B. Therefore, Set A has a greater standard deviation than Set B.

Distractor Explanations: Choices A, C, and D are incorrect. The statements are false.</td><td>Key Explanation: Choice A is correct.
A standard deviation is a measure of how dispersed the data is with respect to the mean. The mean in Data Set A is $\frac{13+14+14+15+15+15+15+15+17+17+18+20}{12}$ = 15.67. The mean in Data Set B is $\frac{14+14+15+15+15+15+15+15+17+17+18}{11}$ = 15.45. Looking at the charts, the data in Set A is more dispersed from its mean compared to the data in Set B. Therefore, Set A has a greater standard deviation than Set B.

Distractor Explanations: Choices B, C, and D are incorrect. The statements are false.</td></tr>
<tr><td>143</td><td>220</td><td></td><td></td><td></td></tr>
<tr><td>149</td><td>226</td><td></td><td><table><tr><th></th><th>0–5 hours</th><th>6–10 hours</th><th>11–15 hours</th><th>Total hours</th></tr><tr><td>Grade 10</td><td>21</td><td>16</td><td>25</td><td>62</td></tr><tr><td>Grade 11</td><td>15</td><td>17</td><td>35</td><td>67</td></tr><tr><td>Total Students</td><td>36</td><td>33</td><td>60</td><td></td></tr></table>According to the data in the table above, if one was to choose a student at random from grade 10, what is the probability that the student studied at least 6 hours a night?</td><td><table><tr><th></th><th>0–5 hours</th><th>6–10 hours</th><th>11–15 hours</th><th>Total students</th></tr><tr><td>Grade 10</td><td>21</td><td>16</td><td>25</td><td>62</td></tr><tr><td>Grade 11</td><td>15</td><td>17</td><td>35</td><td>67</td></tr><tr><td>Total Students</td><td>36</td><td>33</td><td>60</td><td></td></tr></table>According to the data in the table above, if one was to choose a student at random from grade 10, what is the probability that the student studied at least 6 hours a night?</td></tr>
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159	246		1. Most patients who did not take the medicine were healed quickly. 2. Most patients who did not take the medicine were not healed quickly. 3. Most patients who took the medicine were healed quickly. A) I alone is true B) II alone is true C) I and III are true D) II and III are true	I. Most patients who did not take the medicine were healed quickly. II. Most patients who did not take the medicine were not healed quickly. III. Most patients who took the medicine were healed quickly. A) I alone is true B) II alone is true C) I and III are true D) II and III are true
160	248		1. Most patients who did not take the medicine were cured. 2. Most patients who did not take the medicine were not cured. 3. Most patients who took the medicine were cured A) I alone is true B) II alone is true C) I and III are true D) II and III are true	I. Most patients who did not take the medicine were cured. II. Most patients who did not take the medicine were not cured. III. Most patients who took the medicine were cured A) I alone is true B) II alone is true C) I and III are true D) II and III are true
166	260		If a $440m$ track encompasses a circular soccer field, what is the area of half the soccer field? (use π as $\frac{22}{7}$) A) $140m$ B) $7{,}700m$ C) $15{,}400m$ D) $4{,}900m$	If a $440m$ track encompasses a circular soccer field, what is the area of half the soccer field? (use π as $\frac{22}{7}$) A) $140m^2$ B) $7{,}700m^2$ C) $15{,}400m^2$ D) $4{,}900m^2$
170		261	**Key Explanation: Choice B** is correct. The surface area of a cube is given by the formula $6a^2$, given that a is one side of the cube. Since the surface area of the cube is 54, $6a^2 = 54$. Dividing both sides of the equation by 6 yields $a^2 = 9$. Getting the square of both sides of the equation yields $a = 3$. The radius of the sphere will be $3cm$. The volume of a sphere is given by the formula $\frac{4}{3}\pi r^3$ which results to $\frac{4}{3\pi}(3)^3 = 36\pi$.	**Key Explanation: Choice B** is correct. The surface area of a cube is given by the formula $6a^2$, given that a is one side of the cube. Since the surface area of the cube is 54, $6a^2 = 54$. Dividing both sides of the equation by 6 yields $a^2 = 9$. Getting the square root of both sides of the equation yields $a = 3$. The radius of the sphere will be $3cm$. The volume of a sphere is given by the formula $\frac{4}{3}\pi r^3$ which results to $\frac{4}{3}\pi(3)^3 = 36\pi$.

Page No.	Question No.	Answer No.	Error in the book	Corrected
171		264	**Key Explanation: Choice A** is correct. First, find the volume of one frisbee by using the formula *Volume* = $\pi r^2 h$. The diameter is 2 *ft*, therefore, $r = 1$ *ft*. The height is 3 inches; converting it to feet yields $h = \frac{3in}{12} ft\ orh = \frac{1}{4} ft$. Hence, the volume of one frisbee is $\frac{\pi 1^2 1}{4} = \frac{\pi}{4}$. Therefore, the volume of 15 frisbees is $\frac{15\pi}{4}$.	**Key Explanation: Choice A** is correct. First, find the volume of one frisbee by using the formula *Volume* = $\pi r^2 h$. The diameter is 2 *ft*, therefore, $r = 1$ *ft*. The height is 3 inches; converting it to feet yields $h = \frac{3in}{12} ft$ or $h = \frac{1}{4} ft$. Hence, the volume of one frisbee is $\frac{\pi 1^2 1}{4} = \frac{\pi}{4}$. Therefore, the volume of 15 frisbees is $\frac{15\pi}{4}$.
177		272	**Key Explanation:** Given that $AB \parallel CD$ and EF is a transversal, then $a + b = 180°$ since a and b are co–interior angles. Hence, $b = 180 - a$. Given that GH is a transversal for AB and CD, then $d = c$ since c and d are alternate interior angles. Therefore, $b + d = 180 - a + c$.	**Key Explanation: Choice C** is the correct answer. Given that $AB \parallel CD$ and EF is a transversal, then $a + b = 180°$ since a and b are co–interior angles. Hence, $b = 180 - a$. Given that GH is a transversal for AB and CD, then $d = c$ since c and d are alternate interior angles. Therefore, $b + d = 180 - a + c$.
178		273	**Key Explanation: Choice D** is correct. Since the figure above shows that triangle XYZ is inscribed in the circle with center W and diameter XZ, then $YW = ZW$ because they are both radii. Since $YZ = YW = ZW$, then triangle WYZ is equilateral which means all angles are congruent. Since the sum of the inside angles of a triangle is 180°, each angle is 60°. Hence, $\angle ZWY = 60°$. Since $\angle XWY$ is the supplement of $\angle ZWY$, then $\angle XWY = 180 - 60 = 120°$.	**Key Explanation:** 120° is the correct answer. Since the figure above shows that triangle XYZ is inscribed in the circle with center W and diameter XZ, then $YW = ZW$ because they are both radii. Since $YZ = YW = ZW$, then triangle WYZ is equilateral which means all angles are congruent. Since the sum of the inside angles of a triangle is 180°, each angle is 60°. Hence, $\angle ZWY = 60°$. Since $\angle XWY$ is the supplement of $\angle ZWY$, then $\angle XWY = 180 - 60 = 120°$.
178		275	**Key Explanation:** To convert radians to degrees, use the formula $\frac{180}{\pi} \times \theta$. Substituting the given angle yields $\frac{180}{\pi} . \frac{7}{18}\pi$ or 70°.	**Key Explanation:** 70° is the correct answer. To convert radians to degrees, use the formula $\frac{180}{\pi} \times \theta$. Substituting the given angle yields $\frac{180}{\pi} . \frac{7}{18}\pi$ or 70°.
178		276	**Key Explanation:** Angles on a straight line add up to 180°. Therefore, $\angle c = 180 - 125 = 55°$. Since $\angle c$ and $\angle z$ are alternate interior angles, they are equal. Therefore, $z = 55°$.	**Key Explanation:** 55° is the correct answer. Angles on a straight line add up to 180°. Therefore, $\angle c = 180 - 125 = 55°$. Since $\angle c$ and $\angle z$ are alternate interior angles, they are equal. Therefore, $z = 55°$.

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178		277	**Key Explanation:** The coordinates of the midpoint of a line segment is calculated by taking the average of the *x* coordinates and the average of the *y* coordinates of the two points on the line segment. Thus, the midpoint of segment *AB* is given by $\left(\frac{6+0}{2}, \frac{4-8}{2}\right)$ or (3, –2). To determine the correct equation the midpoint coordinates lie on, substitute (3, –2) into each of the answer choices for the variables *x* and *y* and determine which answer choice makes the equation true. The only answer choice that makes the equation true is **Choice C** as –2 = 3 – 5 or –2 = –2.	**Key Explanation: Choice C** is the correct answer. The coordinates of the midpoint of a line segment is calculated by taking the average of the *x* coordinates and the average of the *y* coordinates of the two points on the line segment. Thus, the midpoint of segment *AB* is given by $\left(\frac{6+0}{2}, \frac{4-8}{2}\right)$ or (3, –2). To determine the correct equation the midpoint coordinates lie on, substitute (3, –2) into each of the answer choices for the variables *x* and *y* and determine which answer choice makes the equation true. The only answer choice that makes the equation true is **Choice C** as –2 = 3 – 5 or –2 = –2.
184		285	**Key Explanation:** *Tan a* is equivalent to $\frac{sin\ a}{cos\ a}$. Using the identity $sin\ a = cos(90 - a)$, $sin(90 - a)$ is $cos\ a$. Therefore, $tan\ a = \frac{0.6}{0.3} = 2$.	**Key Explanation:** 2 is the correct answer. *Tan a* is equivalent to $\frac{sin\ a}{cos\ a}$. Using the identity $sin\ a = cos(90 - a)$, $sin(90 - a)$ is $cos\ a$. Therefore, $tan\ a = \frac{0.6}{0.3} = 2$.
186	290		If a circle has a center (1, 3) and a radius of, which of the following points is an endpoint of the circle?	If a circle has a center (1, 3) and a radius of $\sqrt{17}$ which of the following points lies on the circle?
189		290	**Key Explanation: Choice B** is correct. To find an endpoint of a circle, find the equation of a circle from the center and the radius: **Choice B** is correct because it is the only answer, when inserted into the above equation, to solve the circle equation. Substitute $x = 0$ and $y = 7$ in the equation, we get, the equation is satisfied	**Key Explanation: Choice B** is correct. To find an endpoint of a circle, find the equation of a circle from the center and the radius: The equation of a circle in standard form is $(x - h)^2 + (y - k)^2 = r^2$ where (h, k) is the center of the circle and r is the radius. Substituting the given center and radius yields $(x - 1)^2 + (y - 3)^2 = (17)^2$. Simplifying the right side of the equation yields $(x - 1)^2 + (y - 3)^2 = 17$. To identify which points lies on the circle, substitute the values to the equation of the circle. Substituting (0,7) from choice B to $(x - 1)^2 + (y - 3)^2 = 17$ yields $(0 - 1)^2 + (7 - 3)^2 = 17$. Simplifying the equation yields 17=17. Since the statement is correct, then Choice B is the correct answer.

Page No.	Question No.	Answer No.	Error in the book	Corrected
191		300	**Key Explanation:** The standard equation of a circle is given by the equation $(x - h)^2 + (y - k)^2 = r^2$, where r is the radius of the circle. Since $r^2 = 64$, then $r = 8$. The diameter of a circle is twice its radius. Therefore, the diameter of the above circle will be 16.	**Key Explanation:** 16 is the correct answer. The standard equation of a circle is given by the equation $(x - h)^2 + (y - k)^2 = r^2$, where r is the radius of the circle. Since $r^2 = 64$, then $r = 8$. The diameter of a circle is twice its radius. Therefore, the diameter of the above circle will be 16.
205	8#		$3y > 2x + 5$ $y \geq x + 3$ Which of the following is a solution to the inequality below?	$3y > 2x + 5$ $y \leq x + 3$ Which of the following is a solution to the inequality below?
211		3*	**Key Explanation:** The trigonometric identity, $sin(x) = cos(90 - x)$, indicates that the angles are complementary. This means that the sum of $4x + 6$ and $x + 4$ is equal to 90. Therefore, $4x + 6 + x + 4 = 90$. Combining like terms yields $5x + 10 = 90$. Subtracting 10 from both sides of the equation yields $5x = 80$. Dividing both sides of the equation by 5 yields $x = 16$.	**Key Explanation:** 16 is the correct answer. The trigonometric identity, $sin(x) = cos(90 - x)$, indicates that the angles are complementary. This means that the sum of $4x + 6$ and $x + 4$ is equal to 90. Therefore, $4x + 6 + x + 4 = 90$. Combining like terms yields $5x + 10 = 90$. Subtracting 10 from both sides of the equation yields $5x = 80$. Dividing both sides of the equation by 5 yields $x = 16$.
213		10*	**Key Explanation:** To move the function $f(x)$ to the left by 4 units and 2 units up, add 4 to x and add 2 to the constant which yields $f(x) = 3(x + 4) - 4 + 2$. Using distributive property yields $f(x) = 3x + 12 - 2$. Simplifying the equation yields $f(x) = 3x - 10$. The y-intercept is, therefore, 10.	**Key Explanation:** To move the function $f(x)$ to the left by 4 units and 2 units up, add 4 to x and add 2 to the constant which yields $f(x) = 3(x + 4) - 4 + 2$. Using distributive property yields $f(x) = 3x + 12 - 2$. Simplifying the equation yields $f(x) = 3x - 10$. The y-intercept is, therefore, -10.
218		7#	**Key Explanation:** The area of a rectangular field is given by *length* (l) × *width* (w). If the width can be given by w, then the length would then be $w + 7$. Therefore, the area would be $w(w + 7) = 120$ which would result to $w^2 + 7w = 120$. Subtracting 120 from both sides of the equation yields $w^2 + 7w - 120 = 0$. Solve the quadratic equation to find the value of w.	**Key Explanation:** 15 is the correct answer. The area of a rectangular field is given by *length* (l) × *width* (w). If the width can be given by w, then the length would then be $w + 7$. Therefore, the area would be $w(w + 7) = 120$ which would result to $w^2 + 7w = 120$. Subtracting 120 from both sides of the equation yields $w^2 + 7w - 120 = 0$. Solve the quadratic equation to find the value of w.
219		10#	**Key Explanation:** To solve for this, convert the percentage into a fraction that yields $\frac{32}{100}$. Then multiply the fraction by the given amount which yields $\frac{32}{100} \times 500 = 160$.	**Key Explanation:** 160 is the correct answer. To solve for this, convert the percentage into a fraction that yields $\frac{32}{100}$. Then multiply the fraction by the given amount which yields $\frac{32}{100} \times 500 = 160$.

Page No.	Question No.	Answer No.	Error in the book	Corrected
221		16#	**Key Explanation:** To solve for this absolute value, create two equations by multiplying the contents of the absolute value with +1 and −1. The first equation will become $^{+}\lvert 3x - 5\rvert = {}^{+}7$. Simplifying it yields $3x - 5 = 7$. Adding −5 to both sides of the equation yields $3x = 12$. Dividing both sides of the equation by 3 yields $x = 4$. Finding the second solution yields $^{-}\lvert 3x - 5\rvert = {}^{+}7$. Simplifying the equation yields $-3x + 5 = 7$. Subtracting 5 from both sides of the equation yields $-3x = 2$. Dividing both sides of the equation by −3 yields $x = \frac{-2}{3}$. Therefore, 4 is the positive solution to the absolute value.	**Key Explanation:** 4 is the correct answer. To solve for this absolute value, create two equations by multiplying the contents of the absolute value with +1 and −1. The first equation will become $^{+}\lvert 3x - 5\rvert = {}^{+}7$. Simplifying it yields $3x - 5 = 7$. Adding 5 to both sides of the equation yields $3x = 12$. Dividing both sides of the equation by 3 yields $x = 4$. Finding the second solution yields $^{-}\lvert 3x - 5\rvert = {}^{+}7$. Simplifying the equation yields $-3x + 5 = 7$. Subtracting 5 from both sides of the equation yields $-3x = 2$. Dividing both sides of the equation by −3 yields $x = \frac{-2}{3}$. Therefore, 4 is the positive solution to the absolute value.

*M1 – Module 1
#M2 – Module 2

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94		110	**Key Explanation: Choice C** is correct. The most efficient way to solve this problem is to just substitute the answer choices and see which one makes the equation true. Plugging in -6 into the equation results in $-6 + 4 = \sqrt{-4}$ or $-2 = 2$, which is not correct. This eliminates **Choices A** and **B**. Testing **Choice C** results in $-1 + 4 = \sqrt{9}$, or $3 = 3$. Thus **Choice C** is correct. The less efficient way to do this problem is to solve for m. Start by squaring both sides of the equation to remove the square root: The left side of the equation becomes: $(m + 4)^2 = m^2 + 8m + 16$. The right side of the equation becomes: $m + 10$. Setting the two equations equal results in $m^2 + 8m + 16 = m + 10$ Subtracting m and 10 from both sides of the equation yields $m^2 + 7m + 6 = 0$ Factoring the quadratic equation results in $(m + 6)(m + 1) = 0$ Setting each $m + 6$ and $m - 1$ equal to zero results in the solutions $m = -1$ and $m = 6$. Therefore, $m = -1, -6$, When sides of an equation are squared, there can be extraneous solutions created, Thus, both -6 and -1 need to be checked into the original equation to see if there are any extraneous solutions. When -6 is substituted for m in the original equation, there is a negative number under the square root. This is not a valid answer so -6 is not a solution. Therefore, $m = -1$ is the only solution, or **Choice C.**	**Key Explanation: Choice C** is correct. The most efficient way to solve this problem is to just substitute the answer choices and see which one makes the equation true. Plugging in -6 into the equation results in $-6 + 4 = \sqrt{4}$ or $-2 = 2$, which is not correct. This eliminates **Choices A** and **B**. Testing **Choice C** results in $-1 + 4 = \sqrt{9}$, or $3 = 3$. Thus **Choice C** is correct. The less efficient way to do this problem is to solve for m. Start by squaring both sides of the equation to remove the square root: The left side of the equation becomes: $(m + 4)^2 = m^2 + 8m + 16$. The right side of the equation becomes: $m + 10$. Setting the two equations equal results in $m^2 + 8m + 16 = m + 10$ Subtracting m and 10 from both sides of the equation yields $m^2 + 7m + 6 = 0$ Factoring the quadratic equation results in $(m + 6)(m + 1) = 0$ Setting each $m + 6$ and $m + 1$ equal to zero results in the solutions $m = -1$ and $m = -6$. Therefore, $m = -1, -6$, When sides of an equation are squared, there can be extraneous solutions created, Thus, both -6 and -1 need to be checked into the original equation to see if there are any extraneous solutions. Hence -6 is not a solution. Therefore, $m = -1$ is the only solution, or **Choice C.**
96		117	**Key Explanation:** Since $a + b = p + rq$, solve for r by isolating it. Subtracting p from both sides of the equation yields $a + b - p = rq$. Dividing both sides of the equation by q yields $\frac{a+b-p}{q} = r$.	**Key Explanation: Choice D** is correct. Since $a + b = p + rq$, solve for r by isolating it. Subtracting p from both sides of the equation yields $a + b - p = rq$. Dividing both sides of the equation by q yields $\frac{a+b-p}{q} = r$.

Page No.	Question No.	Answer No.	Error in the book	Corrected
97		121	**Key Explanation:** The product of the roots of a quadratic equation can be solved using the formula $\frac{c}{a}$ where a is the coefficient of x^2 and c is the constant. Since $a = 3$ and $c = -6$ the product of the roots is $\frac{-6}{3} = -2$. If one of the roots is $-\frac{1}{3}$, then, $\left(-\frac{1}{3}\right)s = -2$, where s is the second root of the equation. Multiplying both sides of the equation by -3 yields $s = 6$.	**Key Explanation:** 6 is the correct answer. The product of the roots of a quadratic equation can be solved using the formula $\frac{c}{a}$ where a is the coefficient of x^2 and c is the constant. Since $a = 3$ and $c = -6$ the product of the roots is $\frac{-6}{3} = -2$. If one of the roots is $-\frac{1}{3}$, then, $\left(-\frac{1}{3}\right)s = -2$, where s is the second root of the equation. Multiplying both sides of the equation by -3 yields $s = 6$.
97		122	**Key Explanation:** First, determine the factors of the equation to find the solutions. The equation $b^2 - \frac{1}{4} = 0$ features difference of two squares, which indicates that the equation can be factored into conjugates. Factoring the left side of the equation yields $\left(b+\frac{1}{2}\right)\left(b-\frac{1}{2}\right) = 0$. Equating each factor to 0 yields $b = \frac{1}{2}$ and $b = -\frac{1}{2}$. Adding the two factors yields $\frac{1}{2} + \left(-\frac{1}{2}\right)$ or 0.	**Key Explanation:** 0 is the correct answer. First, determine the factors of the equation to find the solutions. The equation $b^2 - \frac{1}{4} = 0$ features difference of two squares, which indicates that the equation can be factored into conjugates. Factoring the left side of the equation yields $\left(b+\frac{1}{2}\right)\left(b-\frac{1}{2}\right) = 0$. Equating each factor to 0 yields $b = \frac{1}{2}$ and $b = -\frac{1}{2}$. Adding the two factors yields $\frac{1}{2} + \left(-\frac{1}{2}\right)$ or 0.
97		123	**Distractor Explanations: Choice A** is incorrect. For an equation to have no solution, simplifying the equation would result in a false statement. **Choice C** is incorrect. Linear systems cannot have two solutions. **Choice D** is incorrect. For a system to have infinite solutions, simplifying the equation would result in a true statement.	**Distractor Explanations: Choice A** is incorrect. For an equation to have no solution, simplifying the equation would result in a false statement. **Choice C** is incorrect. Linear systems cannot have two solutions. **Choice D** is incorrect. For a system to have infinite solutions, simplifying the equation would result in a false statement.
108		127	**Key Explanation:** To evaluate the given expression, make the base the same. Converting 27^a yields $(3^3)^a$ or 3^{3a}. Simplify the expression $\frac{3^{3a}}{3^a}$ by subtracting the exponents which yield 3^{3a-a} or 3^{2a}. Substituting the value of a yields $3^{2(½)}$ or 3^1. Therefore, the expression is equal to 3.	**Key Explanation:** 3 is the correct answer. To evaluate the given expression, make the base the same. Converting 27^a yields $(3^3)^a$ or 3^{3a}. Simplify the expression $\frac{3^{3a}}{3^a}$ by subtracting the exponents which yield 3^{3a-a} or 3^{2a}. Substituting the value of a yields $3^{2(½)}$ or 3^1. Therefore, the expression is equal to 3.
109		128	**Choice C** is incorrect because it features a graph of a cubic function. **Choice D** is incorrect because it features a graph of a quadratic function.	**Choice C** is incorrect because it features a graph of a quadratic function. **Choice D** is incorrect because it features a graph of a cubic function.

Page No.	Question No.	Answer No.	Error in the book	Corrected
110		136	**Key Explanation:** The first step in solving the equation $a+3=\frac{1}{a+3}$ is through cross multiplication. This yields $(a + 3)^2 = 1$. Taking the square root of both sides of the equation results in $(a + 3) = \pm 1$ Only −1 is in the answer choices. Thus, the correct answer is **Choice A**.	**Key Explanation:** The first step in solving the equation $a+3=\frac{1}{a+3}$ is through cross multiplication. This yields $(a + 3)^2 = 1$. Taking the square root of both sides of the equation results in $(a + 3) = \pm 1$ Only 1 is in the answer choices. Thus, the correct answer is **Choice A**.
112		141	**Key Explanation: Choice A** is correct. When graphed, the vertex of the parabola is clearly the minimum $f(x)$ value. To determine the vertex, rewrite the equation in vertex form $f(x) = (x - h)^2 + k$ where (h, k) is the vertex. Completing the squares and grouping the perfect square trinomial yields $f(x) = (x^2 + 4x + 4) - 16$. Simplifying the equation yields $f(x) = (x + 2)^2 - 16$. Hence, the vertex is $(-2, -16)$. Therefore, $x = -2$ when $f(x)$ is at its minimum.	**Key Explanation:** −2 is the correct answer. When graphed, the vertex of the parabola is clearly the minimum $f(x)$ value. To determine the vertex, rewrite the equation in vertex form $f(x) = (x - h)^2 + k$ where (h, k) is the vertex. Completing the squares and grouping the perfect square trinomial yields $f(x) = (x^2 + 4x + 4) - 16$. Simplifying the equation yields $f(x) = (x + 2)^2 - 16$. Hence, the vertex is $(-2, -16)$. Therefore, $x = -2$ when $f(x)$ is at its minimum.

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Page No.		
11	Error in the book	**Distractor Explanations: Choice B** is incorrect. This option is wrong because *C* is the total amount paid by Mindy and not the rate per hour for the dog to run around the park. **Choices C and D** are incorrect. Mindy spent less than \$40. Hence, the correct symbol to use is < not > or =.
	Corrected	**Distractor Explanations: Choice B** is incorrect. This option is wrong because *C* is the total amount paid by Mindy and not the rate per hour for the dog to run around the park. **Choice C** is incorrect. Mindy spends less than \$40, and hence, it should be < instead of =. **Choice D** is incorrect. Mindy spends less than \$40, and hence, it should be < instead of >.
18	Error in the book	A linear function forms a straight line on the graph. For the function of x, $f(x) = 3x - 2$ If $x = 4$ Then, $f(x) = 14 - 2$ Therefore, $f(x)=12$.
	Corrected	A linear function forms a straight line on the graph. For the function of x, $f(x) = 3x - 2$ If $x = 4$ Then, $f(x) = 3 \times 4 = 12$. Therefore, $12 - 2 = 10$. Therefore, $f(x) = 10$.
21	Error in the book	This is an example of a linear inequality equation with one variable, x: $ax + b < c$ where a, b, and c are real numbers. Hence, if $a = 1$, $b = 4$, and $c = 10$, $x < 10 - \frac{4}{1}$ $x < 6$ However, for a linear inequality equation in two variables, $ax + by < c$, where a, b, and c are real numbers, and b is not equal to 0. Hence, if $a = 2$, $b = 3$, and $c = 20$, $y = 1$, x will be $x = 20 - \frac{3}{2}$ $x = 8.5$
	Corrected	This is an example of a linear inequality equation with one variable, x: $ax + b < c$ where a, b, and c are real numbers. Hence, if $a = 1$, $b = 4$, and $c = 10$, $x < 10 - \frac{4}{1}$ $x < 6$ However, for a linear inequality equation in two variables, $ax + by < c$, where a, b, and c are real numbers, and b is not equal to 0. Hence, if $a = 2$, $b = 3$, and $c = 20$, $y = 1$, x will be $x = 20 - \frac{3}{2}$ $x = 18.5$

<table>
<tr><th>Page No.</th><th></th><th></th></tr>
<tr><td rowspan="2">23</td><td>Error in the book</td><td>NOTE: When solving for equivalent expressions, use the following ideas:
• Discover the coefficient in the expressions (in $a(bx + c) = abx + ac$, a, b, and c are the coefficients)
• Combine the variables, which could be x or y
• Solve for the unknown variable, this could be x or y
• Rearrange the final formula</td></tr>
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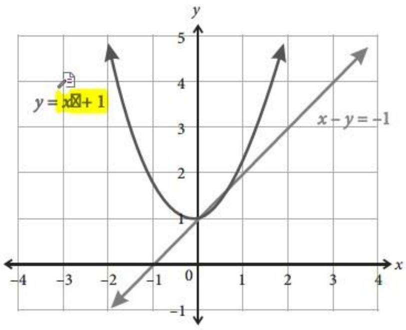
• Rearrange the final formula</td></tr>
<tr><td rowspan="2">24</td><td>Error in the book</td><td>
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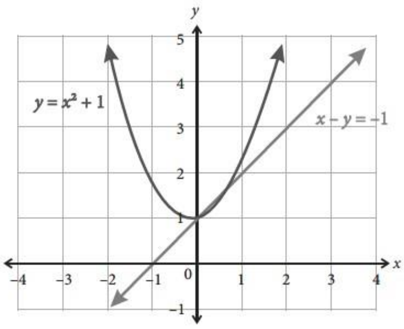
<tr><td>Corrected</td><td>
</td></tr>
<tr><td rowspan="2">27</td><td>Error in the book</td><td>Key Explanation: Choice C is correct. Percentage discount is found by $\frac{Discounht}{original\ \ price} \times 100$. The discount is \$45 – \$40 = \$5. The original price is \$45. $\frac{5}{45} \times 100 = 11.11\%$.</td></tr>
<tr><td>Corrected</td><td>Key Explanation: Choice C is correct. Percentage discount is found by $\frac{discount}{original\ \ price} \times 100$. The discount is \$45 – \$40 = \$5. The original price is \$45. $\frac{5}{45} \times 100 = 11.11\%$.</td></tr>
<tr><td>31</td><td>Error in the book</td><td>A) Peppermint tea doesn't improve the quality of sleep.
B) 39% of those who drank either chamomile, hibiscus, or peppermint tea reported having slept better.
C) Tea is essential to improve your quality of sleep.
D) Hibiscus tea is best to improve the quality of sleep</td></tr>
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Page No.		
	Corrected	A) Peppermint tea doesn't improve the quality of sleep. B) 43.3% of those who drank either chamomile, hibiscus, or peppermint tea reported having slept better. C) Tea is essential to improve your quality of sleep. D) Hibiscus tea is best to improve the quality of sleep
32	Error in the book	**Key Explanations: Choice B** is correct. The total number of students from the study who reported having better sleep is 13 out of the 30 students surveyed. This proportion can be represented as 39% making option B true.
	Corrected	**Key Explanations: Choice B** is correct. The total number of students from the study who reported having better sleep is 13 out of the 30 students surveyed. This proportion can be represented as 43.3% making option B true.

Page No.	Question No.	Answer No.	Error in the book	Corrected
40		4	**Key Explanation:** The correct answer is 114. An equation can be set up and solved with the first sentence which yields $3m + 12 = 33$. Subtracting 12 from both sides of the equation by 12 yields $3m = 21$. Dividing both sides of the equation by 3 yields $m = 7$. The second sentence can be converted into the expression $15m + 9$. Substituting the value of m to the expression yields $15(7) + 9 = 114$.	**Key Explanation:** The correct answer is 114. An equation can be set up and solved with the first sentence which yields $3m + 12 = 33$. Subtracting both sides of the equation by 12 yields $3m = 21$. Dividing both sides of the equation by 3 yields $m = 7$. The second sentence can be converted into the expression $15m + 9$. Substituting the value of m to the expression yields $15(7) + 9 = 114$.
40		5	**Key Explanation:** The correct answer is 112. Let the variables A, B and C be the distance traveled by Car A, Car B, and Car C, respectively. Since they traveled a total of 336 miles, then $A + B + C = 336$. Since Car A traveled 3 times as far as Car B, then $A = 3B$. Since Car C traveled twice as far as Car B, then $C = 2B$. Substituting the values of A and C in terms of B to the first equation yields $3B + B + 2B = 336$. Combining like terms yields $6B = 336$. Dividing both sides of the equation by 6 yields $B = 56$. Since $C = 2B$, then $C = 2(56) = 112$. Therefore, Car C traveled 112 miles.	**Key Explanation:** The correct answer is 112 miles. Let the variables A, B and C be the distance traveled by Car A, Car B, and Car C, respectively. Since they traveled a total of 336 miles, then $A + B + C = 336$. Since Car A traveled 3 times as far as Car B, then $A = 3B$. Since Car C traveled twice as far as Car B, then $C = 2B$. Substituting the values of A and C in terms of B to the first equation yields $3B + B + 2B = 336$. Combining like terms yields $6B = 336$. Dividing both sides of the equation by 6 yields $B = 56$. Since $C = 2B$, then $C = 2(56) = 112$. Therefore, Car C traveled 112 miles.
41		7	**Key Explanation:** To solve for the value of x, subtract 18 from both sides. This yields $3x + 18 - 18 = 27 - 18$ or $3x = 9$. Divide both sides of the equation by 3. The result would be $x = 3$.	**Key Explanation:** 3 is correct. To solve for the value of x, subtract 18 from both sides. This yields $3x + 18 - 18 = 27 - 18$ or $3x = 9$. Divide both sides of the equation by 3. The result would be $x = 3$.

Page No.	Question No.	Answer No.	Error in the book	Corrected
56		31	**Key Explanation: Choice D** is correct. In the equation, the variables x and z represent the number of hours worked by an employee. Since the total pay (y) is determined by multiplying x and y by 20 and 25 respectively, it can be deduced that 20 and 25 are the rates of pay. And since 25 is being multiplied by z, it is the rate of pay per overtime hour of work.	**Key Explanation: Choice D** is correct. In the equation, the variables x and z represent the number of hours worked by an employee. Since the total pay (y) is determined by multiplying x and z by 20 and 25 respectively, it can be deduced that 20 and 25 are the rates of pay. And since 25 is being multiplied by z, it is the rate of pay per overtime hour of work.
65		44	**Distractor Explanations: Choice A** is incorrect and may result from interchanging the values of x and y. **Choice C** is incorrect and may result from interchanging the signs of x and y. **Choice D** is incorrect and may result from a conceptual or calculation error.	**Distractor Explanations: Choice A** is incorrect and may result from interchanging the values of x and y. **Choice C** is incorrect and may result from interchanging the values and signs of x and y. **Choice D** is incorrect and may result from a conceptual or calculation error.
65		45	**Key Explanation: Choice C** is correct. In order to create equations that represent the data from the market, the variables s and f must be matched and multiplied with their correct totals and constants. If the total number of spots sold is 14, then the first equation will be $s + f = 14$. If the total rented area is 64, then the second equation will be $6s + 4f = 64$.	**Key Explanation: Choice C** is correct. In order to create equations that represent the data from the market, the variables s and f must be matched and multiplied with their correct totals and constants. 6 square feet is denoted by s and hence total 6 square feet rented area is 6 square feet × s = $6s$. 4 square feet is denoted by f and hence total 4 square feet rented area is 4 square feet × $f = 4f$. If the total number of spots sold is 14, then the first equation will be $s + f = 14$. If the total rented area is 64, then the second equation will be $6s + 4f = 64$.
66		48	**Key Explanation:** Start by solving the system of equations using the elimination method. Multiplying the first equation by 5 yields $-5x + 10y = 40.5$. Adding the first and the second equation yields $-5x + 10y + 5x - 3y = 40.5 - \frac{122}{5}$. Combining like terms yields $7y = 16.1$. Dividing 7 from both sides of the equation yields $y = 2.3$. Then, substitute this value into the original first equation and solve for x. This yields $-x + 2(2.3) = 8.1$ or $x = -3.5$. Therefore, $2x - y = 2(-3.5) + 2.3 = -9.3$.	**Key Explanation: Choice A** is correct. Start by solving the system of equations using the elimination method. Multiplying the first equation by 5 yields $-5x + 10y = 40.5$. Adding the first and the second equation yields $-5x + 10y + 5x - 3y = 40.5 - \frac{122}{5}$. Combining like terms yields $7y = 16.1$. Dividing 7 from both sides of the equation yields $y = 2.3$. Then, substitute this value into the original first equation and solve for x. This yields $-x + 2(2.3) = 8.1$ or $x = -3.5$. Therefore, $2x - y = 2(-3.5) + 2.3 = -9.3$.

Page No.	Question No.	Answer No.	Error in the book	Corrected
70		61	**Key Explanation:** Choice B is correct. In order for a system of equations to be true for all real numbers, the equations must be the same line. The coefficients for both variables, as well as the constants, must be proportional to one another. Start by reorganizing the equations into the same form which yields $dx + 7y = 4$ and $4x + 14y = e$. The coefficients of y reveal that the equations are proportional and have a ratio of 7:14 or 1:2. Therefore, the coefficients of x must also have the same ratio. Applying the ratio yields $\frac{d}{4}=\frac{1}{2}$. Multiplying 4 to both sides of the equation yields $d = 2$.	**Key Explanation:** 2 is correct. In order for a system of equations to be true for all real numbers, the equations must be the same line. The coefficients for both variables, as well as the constants, must be proportional to one another. Start by reorganizing the equations into the same form which yields $dx + 7y = 4$ and $4x + 14y = e$. The coefficients of y reveal that the equations are proportional and have a ratio of 7:14 or 1:2. Therefore, the coefficients of x must also have the same ratio. Applying the ratio yields $\frac{d}{4}=\frac{1}{2}$. Multiplying 4 to both sides of the equation yields $d = 2$.
71		67	Adding 12 to both sides of the equation yields $3x = 17$. Dividing both sides of the equation by yields $x=\frac{17}{3}$. Now, find y by substituting the value for x into either of the two equations. Substituting it to the first equation yields $y=2\left(\frac{17}{3}\right)-6=\frac{34}{3}-6=\frac{16}{3}=5.33$.	Adding 12 to both sides of the equation yields $3x = 17$. Dividing both sides of the equation by 3 yields $x=\frac{17}{3}$. Now, find y by substituting the value for x into either of the two equations. Substituting it to the first equation yields $y=2\left(\frac{17}{3}\right)-6=\frac{34}{3}-6=\frac{16}{3}=5.33$.
71		68	**Key Explanation:** Linear systems with no solution are parallel and have the same gradient. Using distributive property to simplify both equations yields $y = 3x - 15 + 10 - 2x$ and $y = 2p - px + 6x$. Combining like terms yields $y = x - 5$ and $y = (6 - p)x + 2p$. Equating the slopes of the equations yields $1 = 6 - p$. Adding p and subtracting 1 from both sides of the equation yields $p = 5$.	**Key Explanation:** 5 is the correct answer. Linear systems with no solution are parallel and have the same gradient. Using distributive property to simplify both equations yields $y = 3x - 15 + 10 - 2x$ and $y = 2p - px + 6x$. Combining like terms yields $y = x - 5$ and $y = (6 - p)x + 2p$. Equating the slopes of the equations yields $1 = 6 - p$. Adding p and subtracting 1 from both sides of the equation yields $p = 5$.

Page No.	Question No.	Answer No.	Error in the book	Corrected
76		71	**Key Explanation:** Using the given equation $8y - 4x = 5$, find the value of y in terms of x. Adding $4x$ to both sides of the equation yields $8y = 4x + 5$. Dividing both sides of the equation by 8 yields $y = \frac{4x+5}{8}$. Substituting the equation to the inequality $y >$ 800 yields . Multiplying 8 to both sides of the inequality yields $4x + 5 > 6400$. Subtracting 5 from both sides of the inequality yields $4x > 6395$. Dividing 4 from both sides of the equation yields $x > \frac{6395}{4}$ or $x > 1598.75$. Since x must be greater than 1598.75, then the least integer value of x is 1599.	**Key Explanation:** 1,599 is the correct answer. Using the given equation $8y - 4x = 5$, find the value of y in terms of x. Adding $4x$ to both sides of the equation yields $8y = 4x + 5$. Dividing both sides of the equation by 8 yields $y = \frac{4x+5}{8}$. Substituting the equation to the inequality $y >$ 800 yields . Multiplying 8 to both sides of the inequality yields $4x + 5 > 6{,}400$. Subtracting 5 from both sides of the inequality yields $4x > 6{,}395$. Dividing 4 from both sides of the equation yields $x > \frac{6{,}395}{4}$ or $x > 1{,}598.75$. Since x must be greater than 1,598.75, then the least integer value of x is 1,599.
77		74	**Key Explanation:** The greatest possible value of the expression $x - y$ can be obtained using the maximum value of x and the minimum value of y. From the given inequalities, the maximum possible value of x is 90 and the minimum possible value of y is -30. Substituting the values to the expression $x - y$ yields $90 - (-30)$ or 120.	**Key Explanation:** The greatest possible value of the expression $x - y$ can be obtained using the maximum value of x and the minimum value of y. From the given inequalities, the maximum possible value of x is 90 and the minimum possible value of y is -30. Substituting the values to the expression $x - y$ yields $90 - (-30)$ or 120.
85	105		If the expression $a^{\frac{3}{2}} \cdot b^{\frac{1}{3}}$ is equivalent to $\sqrt[p]{(a)^{11}}$, what is the value p if $b = a$?	If the expression $a^{\frac{3}{2}} \cdot b^{\frac{1}{3}}$ is equivalent to $\sqrt[p]{(a)^{11}}$, what is the value of p if $b = a$?
89		105	**Key Explanation:** If $b = a$, then $a^{\frac{3}{2}}.b^{\frac{1}{3}} = a^{\frac{3}{2}}.b^{\frac{1}{3}}$. Since the bases are the same, the exponents should therefore be added. Adding the exponents yields $\frac{3}{2}+\frac{1}{3}=\frac{9+2}{6}=\frac{11}{6}$. Equating the two expressions yields $a^{\frac{11}{6}} = \sqrt[p]{a^{11}}$. Rewriting the right side of the equation in exponential form yields $a^{\frac{11}{6}} = a^{\frac{11}{p}}$. Matching the exponents yields $p = 6$.	**Key Explanation:** 6 is the correct answer. If $b = a$, then $a^{\frac{3}{2}}.b^{\frac{1}{3}} = a^{\frac{3}{2}}.b^{\frac{1}{3}}$. Since the bases are the same, the exponents should therefore be added. Adding the exponents yields $\frac{3}{2}+\frac{1}{3}=\frac{9+2}{6}=\frac{11}{6}$. Equating the two expressions yields $a^{\frac{11}{6}} = \sqrt[p]{a^{11}}$. Rewriting the right side of the equation in exponential form yields $a^{\frac{11}{6}} = a^{\frac{11}{p}}$. Matching the exponents yields $p = 6$.

Page No.	Question No.	Answer No.	Error in the book	Corrected
90		106	**Key Explanation:** To determine the values of a,b,c, simplify the right side of the equation by using distributive property which yields $2x^2 - 10x + x - 5 - 13$. Combining like terms yields $2x^2 - 9x - 18$. Comparing the coefficients and constant on the equation $ax^2 + bx + c = 2x^2 - 9x - 18$ yields $a = 2$, $b = -9$ and $c = -18$. Substituting the value to the expression $a + b + c$ yields $2 - 9 - 18$. Therefore, the value of the expression is -25.	**Key Explanation:** -25 is the correct answer. To determine the values of a,b,c, simplify the right side of the equation by using distributive property which yields $2x^2 - 10x + x - 5 - 13$. Combining like terms yields $2x^2 - 9x - 18$. Comparing the coefficients and constant on the equation $ax^2 + bx + c = 2x^2 - 9x - 18$ yields $a = 2$, $b = -9$ and $c = -18$. Substituting the value to the expression $a + b + c$ yields $2 - 9 - 18$. Therefore, the value of the expression is -25.
91	113		$2^x \times 2^y = 1{,}028$ In the equation above, what is the value of $x + y$?	$2^x \times 2^y = 1{,}024$. In the equation above, what is the value of $x + y$?

This book had multiple print runs; this errata is applicable to print runs before April 17, 2023. The consecutive print runs have corrected these errors. In case you do not find the below errors in your book, it is because they have been corrected.

Page No.	Question No.	Answer No.	Error in the book	Corrected
41		8	**Key Explanation: Choice D** is correct. Begin by creating an equation to represent the total number of hours Tyrone needs to study in terms of x hours per 5 weekdays, if he studies 10 hours per day over the two weekend days: $50 = 20 + 5x$ $30 = 5x$ $x = 6$ hours per day **Distractor Explanations: Choices A, B, and C** are incorrect.	**Key Explanation: Choice D** is correct. Begin by creating an equation to represent the total number of hours Tyrone needs to study in terms of x hours per 5 weekdays, if he studies 10 hours per day over the two weekend days: $50 = 20 + 5x$ $30 = 5x$ $x = 6$ hours per day **Distractor Explanations: Choices A, B,** and **C** are incorrect and reflect errors in interpreting the value of variables in the word problem.
50		22	**Key Explanation: Choice C** is correct. Modify the equation in order to express an increase in Celsius by two degrees. Therefore, the new temperature in degrees Fahrenheit is $F_{new} = \frac{9}{5}(C+2)+32$. Getting the difference between the new and original equation yields $F_{new} - = \left[\frac{9}{5}(C+2)+32\right] - \left(\frac{9}{5}C+32\right)$. Using the distributive property and combining like terms to simplify the equation yields $F_{new} - F = \frac{9}{5}(C+2) - \frac{9}{5}C$. Factoring out $\frac{9}{5}$ yields $\frac{9}{5}(C+2-C)$ or $\frac{9}{5}(2)$. Therefore, the equivalent increase in degrees Fahrenheit is $\frac{18}{5}$ or 3.6.	**Key Explanation: Choice C** is correct. Modify the equation in order to express an increase in Celsius by two degrees. Therefore, the new temperature in degrees Fahrenheit is $F_{new} = \frac{9}{5}(C+2)+32$. Getting the difference between the new and original equation yields $F_{new} - F = \left[\frac{9}{5}(C+2)+32\right] - \left(\frac{9}{5}C+32\right)$. Using the distributive property and combining like terms to simplify the equation yields $F_{new} - F = \frac{9}{5}(C+2) - \frac{9}{5}C$. Factoring out $\frac{9}{5}$ yields $\frac{9}{5}(C+2-C)$ or $\frac{9}{5}(2)$. Therefore, the equivalent increase in degrees Fahrenheit is $\frac{18}{5}$ or 3.6.
64	64		$9x + y = -19$ $\frac{7}{4}x - 5y = \frac{3}{2}$ For the system of equations above, in which quadrant does the solution lie? A) I B) II C) III D) IV	Is (25, 11) the solution to the following system of equations? $y + x = 36$ $2y + 8x = 140$ A) Yes, (25, 11) is the solution because it satisfies both equations. B) No (25, 11) is not the solution because it does not satisfy the first equation. C) No, (25, 11) is not the solution because it does not satisfy the second equation. D) More information is needed in order to answer the question.

Page No.	Question No.	Answer No.	Error in the book	Corrected
69		58	**Key Explanation:** The correct answer is 2. A system of equations with no solution on a coordinate plane is two parallel lines or lines with the same slope. To solve for the slope, convert each equation to slope–intercept form. Subtracting $24x$ to both sides of the first equation yields $-6y = -24x + 33$. Dividing -6 from both sides of the first equation yields $y=\frac{-24}{-6}x+\frac{33}{-6}$ or $y=4x-\frac{33}{6}$. Therefore, the slope of the first equation is 4. Subtracting $8x$ to both sides of the second equation yields $-sy = -8x - 12$. Dividing $-s$ from both sides of the second equation yields $y=\frac{-8}{-s}x-\frac{12}{-s}$ or $y=\frac{8}{s}x+\frac{12}{-s}$. Therefore, the slope of the second equation is $\frac{8}{s}$. Since the two equations have equal slope, then $4=\frac{8}{s}$. Multiplying s and dividing 4 from both sides of the equation yields $s=\frac{8}{4}$. Therefore, $s = 2$.	**Key Explanation:** The correct answer is 2. A system of equations with no solution on a coordinate plane is two parallel lines or lines with the same slope. To solve for the slope, convert each equation to slope–intercept form. Subtracting $24x$ to both sides of the first equation yields $-6y = -24x + 33$. Dividing -6 from both sides of the first equation yields $y=\frac{-24}{-6}x+\frac{33}{-6}$ or $y=4x-\frac{33}{6}$. Therefore, the slope of the first equation is 4. Subtracting $8x$ to both sides of the second equation yields $-sy = -8x - 12$. Dividing $-s$ from both sides of the second equation yields $y=\frac{-8}{-s}x-\frac{12}{-s}$ or $y=\frac{8}{s}x+\frac{12}{s}$. Therefore, the slope of the second equation is $\frac{8}{s}$. Since the two equations have equal slope, then $4=\frac{8}{s}$. Multiplying s and dividing 4 from both sides of the equation yields $s=\frac{8}{4}$. Therefore, $s = 2$.
70		64	**Level:** Easy | **Skill/Knowledge:** Systems of two linear equations in two variables | **Testing Point:** Solving a system of two linear equations and determining quadrant of solution **Key Explanation: Choice C** is correct. Use the elimination method to solve the system of equations. Multiplying 5 to the first equation yields $45x + 5y = -95$. Adding the first and the second equation yields $45x + 5y + \frac{7}{4}x - 5y = -95 + \frac{3}{2}$. Combining like terms yields $\frac{187}{4}x=-\frac{187}{2}$. Multiplying 4 and dividing 187 from both sides of the equation yields $x = -2$. Substituting the value of x to the original first equation yields $9(-2) + y = -19$ or $-18 + y = -19$. Adding 18 to both sides of the equation yields $y = -1$. Therefore, the solution to the system of equations is $(-2, -1)$ which lies on Quadrant III. **Distractor Explanations: Choices A**, **B**, and **D** are incorrect and most likely result from an error in calculating the values of x and y or from an error in plotting the solution in the wrong quadrant.	**Level:** Easy | **Skill/Knowledge:** Systems of two linear equations in two variables | **Testing Point:** Solving System of Linear Equations **Key Explanation: Choice C** is correct. Plugging $(25, 11)$ into the first equation, yields $11 + 25 = 36$ or $36 = 36$, which is true. Plugging $(25, 11)$ into the second equation yields $2(11) + 8(25) = 140$. Simplifying the equation yields $222 = 140$, which is false. Therefore, **Choice C** is the correct answer. **Distractor Explanations: Choices A** and **B** are incorrect. These statements are false. **Choice D** is incorrect. There is enough information to answer the question.

Page No.	Question No.	Answer No.	Error in the book	Corrected
78		80	**Key Explanation: Choice B** is correct. If the frame can hold up to 12 pounds, the variable (s) must be greater than or equal to the sum of the other variables. Since the total weight of the painting and the frame is $x + y$, then the inequality is $s \geq x + y$ or $s \geq y + x$. Therefore, **Choice B** is correct.	**Key Explanation: Choice B** is correct. If the frame can hold up to 12 pounds, the variable (s) must be greater than or equal to the sum of the other variables. Since the total weight of the painting and the frame is $x + y$, then the inequality is $s \geq x + y$ or $s \geq y + x$. Therefore, **Choice B** is correct.
79		81	**Key Explanation: Choice C** is correct. To find the possible values of t, make two inequalities using the content of the absolute value and the positive and negative values of the constant. This yields $2t - 2 < 1$ and $2t - 2 > -1$. Solving the values of t yields $t < \frac{3}{2}$ and $t < \frac{1}{2}$. Combining the two inequalities yields $\frac{1}{2} < t < \frac{3}{2}$ or $0.5 < t < 1.5$. Since t is an integer, then t can only be equal to 1.	**Key Explanation: Choice C** is correct. To find the possible values of t, make two inequalities using the content of the absolute value and the positive and negative values of the constant. This yields $2t - 2 < 1$ and $2t - 2 > -1$. Solving the values of t yields $t < \frac{3}{2}$ and $t > \frac{1}{2}$. Combining the two inequalities yields $\frac{1}{2} < t < \frac{3}{2}$ or $0.5 < t < 1.5$. Since t is an integer, then t can only be equal to 1.
82	91		Simplify the following expression $\frac{2x-1}{x-3} - \frac{x-1}{x+2}$. A) $\left(\frac{x^2+7x-5}{x^2-x-6}\right)$ B) $\left(\frac{x^2+7x-5}{x^2+x-6}\right)$ C) $\left(\frac{x^2+x-1}{2x-1}\right)$ D) $\left(\frac{x^2+x-1}{(x+2)(x-3)}\right)$	Simplify the following expression $\frac{2x-1}{x-3} - \frac{x-1}{x+2}$. A) $\left(\frac{x^2+7x-5}{x^2-x-6}\right)$ B) $\left(\frac{x^2+7x-5}{x^2+x-6}\right)$ C) $\left(\frac{x^2-x-1}{2x-1}\right)$ D) $\left(\frac{x^2+x-1}{(x+2)(x-3)}\right)$
87		92	$-7x^2 + 4x - 12 - (3x^2 + 16x + 4)$ $= -7x^2 + 4x - 12 + (-3x^2) + (-16x) + (-4)$ $= -10x^2 - 12x - 16$ The standard form of a quadratic equation is $y = ax^2 + bx + c$. Therefore, $a = -10$, $b = -12$, $= -16$. The product of a and c is $-10 \times -16 = 160$.	$-7x^2 + 4x - 12 - (3x^2 + 16x + 4)$ $= -7x^2 + 4x - 12 + (-3x^2) + (-16x) + (-4)$ $= -10x^2 - 12x - 16$ The standard form of a quadratic equation is $y = ax^2 + bx + c$. Therefore, $a = -10$, $b = -12$, $c = -16$. The product of a and c is $-10 \times -16 = 160$.
104	151		If $f(x) = \frac{3}{2} + 2$ and $f(x) = 3$, what is the value of $(x)^{-1}$? A) $\frac{3}{2}$ B) $\frac{2}{3}$ C) 3 D) 2	If $f(x) = \frac{3}{2}x + 2$ and $f(x) = 3$, what is the value of $(x)^{-1}$? A) $\frac{3}{2}$ B) $\frac{2}{3}$ C) 3 D) 2

<table>
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<tr><td>116</td><td></td><td>159</td><td>Key Explanation: Choice A is correct. The vertex of $f(x)$ is (−2, 12). The equation of $g(x) = -2x^2 + 4x + 14$ in vertex form would be $-2(x - 1)2 + 16$. Hence, the vertex would be (1, 16). The x coordinate translation from −2 to 1 is 3 units to the right.</td><td>Key Explanation: Choice A is correct. The vertex of $f(x)$ is (−2, 12). The equation of $g(x) = -2x^2 + 4x + 14$ in vertex form would be $-2(x - 1)^2 + 16$. Hence, the vertex would be (1, 16). The x coordinate translation from −2 to 1 is 3 units to the right.</td></tr>
<tr><td>125</td><td></td><td>179</td><td>yields $\frac{Plant\ life}{1{,}680{,}000} = \frac{2}{5}$. Substituting 1,680,000 to the equation yields $\frac{Plant\ life}{1{,}680{,}000} = \frac{2}{5}$. Multiplying both sides of the equation by 1,680,000 yields Plant life $= \frac{2 \times 1{,}680{,}000}{5} = 672{,}000$.</td><td>yields $\frac{Plant\ life}{Animal\ life} = \frac{2}{5}$. Substituting 1,680,000 to the equation yields $\frac{Plant\ life}{1{,}680{,}000} = \frac{2}{5}$. Multiplying both sides of the equation by 1,680,000 yields $Plant\ life = \frac{2 \times 1{,}680{,}000}{5} = 672{,}000$.</td></tr>
<tr><td>131</td><td></td><td>189</td><td>Level: Medium | Skill/Knowledge: Percentages
Testing Point: Working with percentage deincrease and discount</td><td>Level: Medium | Skill/Knowledge: Percentages
Testing Point: Working with percentage decrease and discount</td></tr>
<tr><td>135</td><td>209</td><td></td><td>The data above represents how Class Buck and Class Mow performed in their midterm results. Which of the following cannot be true about the two classes represented in the table above?

A) The median of Class Buck and Class Mow is 73.5%.
B) The mean of Class Mow is greater than the mean of Class Buck.
C) The standard deviation of Class Mow is higher than the standard deviation of Class Buck.
D) The median of Class Buck is 57.6%.</td><td><table><tr><th></th><th>CLASS BUCK</th><th>CLASS MOW</th></tr><tr><td>100 – 80</td><td>1</td><td>4</td></tr><tr><td>80 – 60</td><td>8</td><td>9</td></tr><tr><td>60 – 40</td><td>6</td><td>2</td></tr><tr><td>40 – 20</td><td>1</td><td>1</td></tr></table>The data above represents how Class Buck and Class Mow performed in their midterm results. Which of the following cannot be true about the two classes represented in the table above?

A) The median of Class Buck and Class Mow is 73.5%.
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D) The median of Class Buck is 57.6%.</td></tr>
<tr><td>136</td><td></td><td>200</td><td>Key Explanation: Choice A is correct. Begin by calculating the total time traveled by the geese in hours:

Converting days to hours yields $3.75\ days \times \frac{24\ hours}{1\ day} = 90\ hours.$

Divide the total distance in miles by the total time in hours to calculate the average speed which yields Average speed = $\frac{2{,}365\ Miles}{90\ hours} = 26{,}2777\ mph.$ Rounding off to the nearest tenth, yields 26.3 mph.</td><td>Key Explanation: Choice A is correct. Begin by calculating the total time traveled by the geese in hours:

Converting days to hours yields $3.75\ days \times \frac{24\ hours}{1\ day} = 90\ hours.$

Divide the total distance in miles by the total time in hours to calculate the average speed which yields Average speed = $\frac{2{,}365\ Miles}{90\ hours} = 26.2777\ mph.$ Rounding off to the nearest tenth, yields 26.3 mph.</td></tr>
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<tr><td>157</td><td></td><td>236</td><td>Key Explanation: Choice C is correct. Here p is the proportion. The standard error of p is given by $\sqrt{}(p(1-p)/n)$, where n is the number of employees interviewed.
Standard Error = $\sqrt{}(0.9(1-0.9)/1000)$ = $\sqrt{}((0.9\times0.1)/1000) = 0.0094 \approx 0.009$.</td><td>Key Explanation: Choice C is correct. Here p is the proportion. The standard error of p is given by $\sqrt{\left(\frac{p(1-p)}{n}\right)}$, where n is the number of employees interviewed.
Standard Error =
$\sqrt{\left(\frac{0.9(1-0.9)}{1000}\right)} = \sqrt{\left(\frac{(0.9\times0.1)}{1000}\right)} = 0.0094 \approx 0.009.$</td></tr>
<tr><td>162</td><td></td><td>248</td><td>Key Explanation: Choice D is correct. II is true as only $\frac{56}{700}$ or 8% of the patients who did not take the medicine got cured, rest 92% not cured. III is true as $\frac{810}{900}$ or 90% of the patients have cured.

Distractor Explanations: I is not true since only $\frac{72}{800}$ or 9% got cured.</td><td>Key Explanation: Choice D is correct. II is true as only $\frac{56}{700}$ or 8% of the patients who did not take the medicine got cured, rest 92% not cured. III is true as $\frac{810}{900}$ or 90% of the patients who took the medicine got cured.

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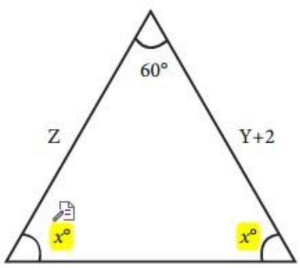
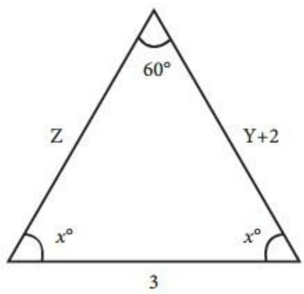
<tr><td>168</td><td></td><td>251</td><td>Level: Easy | Skill/Knowledge: Area and volume
Testing Point: Finding the volume of a spher</td><td>Level: Easy | Skill/Knowledge: Area and volume
Testing Point: Finding the volume of a sphere</td></tr>
<tr><td>173</td><td>268</td><td></td><td>

According to the triangle above, what is the value of side Z?</td><td>

According to the triangle above, what is the value of side Z?</td></tr>
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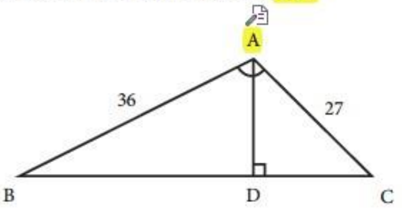
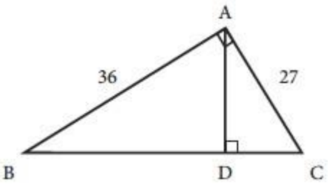
180	280		In a right triangle, if $\angle x + \angle y = 90°$ and $\cos x = x = \frac{5}{12}$, what is the value of $\sin y$?	In a right triangle, if $\angle x + \angle y = 90°$ and $\cos x = \frac{5}{12}$, what is the value of $\sin y$?
196	M1*-1		If $f(1) = 4$ and $f(5) = 12$, what is the value of the y-intercept of the function $f(x)$? A) 4 B) −8 C) 2 D) 8	If $f(1) = -4$ and $f(5) = 12$, what is the value of the y-intercept of the function $f(x)$? A) 4 B) −8 C) 2 D) 8
196	M1-6		If $\frac{-3+}{-4}$ is a solution to the equation $-2x^2 + 3x + 6 = 0$, what is the value of n?	If $\frac{-3+\sqrt{n}}{-4}$ is a solution to the equation $-2x^2 + 3x + 6 = 0$, what is the value of n?
197	M1-7		What is the value of 83 radians in degrees? A) 960° B) 480° C) 240° D) 120°	What is the value of $\frac{8}{3}\pi$ radians in degrees? A) 960° B) 480° C) 240° D) 120°
198	M1-13		A cylinder with an open top has a radius of 14*cm* and a height of 10*cm*. What is the value of the surface area of the cylinder? A) 1960 B) 476 C) 672 D) 1400	A cylinder with an open top has a radius of 14*cm* and a height of 10*cm*. What is the value of the surface area of the cylinder? A) 1960π B) 476π C) 672π D) 1400π
204	M2#-1		$p(x) = 60{,}040(1.012)^x$ The function $p(x)$ models the population of city Y from the year 2004 to the year 2016. Which of the following statements best represents (1.012) x? A) The population of city Y increases by 12% every year from 2004 to 2016. B) The population of city Y increases y 1.2% every year from 2004 to 2016. C) The population of city Y decreases by 12% every year from 2004 to 2016. D) The population of city Y decreases by 1.2% every year from 2004 to 2016.	$p(x) = 60{,}040(1.012)^x$ The function $p(x)$ models the population of city Y from the year 2004 to the year 2016. Which of the following statements best represents $(1.012)^x$? A) The population of city Y increases by 12% every year from 2004 to 2016. B) The population of city Y increases y 1.2% every year from 2004 to 2016. C) The population of city Y decreases by 12% every year from 2004 to 2016. D) The population of city Y decreases by 1.2% every year from 2004 to 2016.

Page No.	Question No.	Answer No.	Error in the book	Corrected
204	M2-4		Triangle ABC is shown below. If $AB = 36cm$ and $AC = 27cm$, what is the value of DC?  A) 28.80 B) 21.60 C) 19.29 D) 25.71	Triangle ABC is shown below. If $AB = 36cm$ and $AC = 27cm$, what is the value of BD?  A) 28.80 B) 21.60 C) 19.29 D) 25.71
212		M1-6	**Key Explanation:** To solve for this quadratic equation, use the quadratic formula $x = \frac{+b \pm \sqrt{b^2 - 4ac}}{2a}$, where $a = -2$, $b = 3$ and $c =$ 6. Substituting the values yields $\frac{-3 \pm \sqrt{3^2 - 4(-2)(6)}}{2(-2)} = \frac{3 \pm \sqrt{57}}{4}$. Therefore the value of $n = 57$.	**Key Explanation:** To solve for this quadratic equation, use the quadratic formula $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$, where $a = -2$, $b = 3$ and $c = 6$. Substituting the values yields $\frac{-3 \pm \sqrt{3^2 - 4(-2)(6)}}{2(-2)} = \frac{3 \pm \sqrt{57}}{4}$. Therefore the value of $n = 57$.
212		M1-7	**Key Explanation: Choice** B is correct. π radian is equal to 180°. Therefore, to convert radians to degrees, substitute π with with 180° which yields $\frac{8}{3} \times 180° = 480°$.	**Key Explanation: Choice** B is correct. π radian is equal to 180°. Therefore, to convert radians to degrees, substitute π with 180° which yields $\frac{8}{3} \times 180° = 480°$.
212		M1-8	**Key Explanation: Choice B** is correct. To solve for this inequality, the content of the absolute value must be multiplied by 1 and −1 which yields: $^{+}\|2x - 5\| < {}^{+}3$; $^{-}\|2x - 5\| < +3$ $2x - 5 < 3$; $-2x + 5 < 3$ $2x < 8$; $-2x < -2$ $x < 4$; $x > 1$	**Key Explanation: Choice B** is correct. To solve for this inequality, the content of the absolute value must be multiplied by 1 and −1 which yields: $^{+}\|2x - 5\| < {}^{+}3$; $^{-}\|2x - 5\| < {}^{+}3$ $2x - 5 < 3$; $-2x + 5 < 3$ $2x < 8$; $-2x < -2$ $x < 4$; $x > 1$
213		M1-11	**Key Explanation: Choice C** is correct. In a quadratic equation, the sum of the solutions/ roots is given by $-\frac{b}{a}$ where a and b are the coefficients of x^2 and x, respectively. Referring to the given equation, the values of a and b are $a =$ 3 and $b = 6$. Therefore, the sum of the solutions will be $-\frac{6}{3} = -2$.	**Key Explanation: Choice C** is correct. In a quadratic equation, the sum of the solutions/ roots is given by $\frac{-b}{a}$ where a and b are the coefficients of x^2 and x, respectively. Referring to the given equation, the values of a and b are $a = 3$ and $b = 6$. Therefore, the sum of the solutions will be $\frac{-6}{3} = -2$.

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215		M1-18	**Key Explanation: Choice B** is correct. For a system of equation to have no solution, the two lines must be parallel Using the points (0, 4) and (10, 0), the slope of the given line is $\frac{75}{180}\pi = \frac{5}{12}\pi$. Line *m* would also, therefore, have a slope of –0.4. Only $10y + 4x = 6$ has a slope of –0.4 and would therefore be the correct answer.	**Key Explanation: Choice B** is correct. For a system of equation to have no solution, the two lines must be parallel Using the points (0, 4) and (10, 0), the slope of the given line is $\frac{4-0}{0-10} = \frac{4}{-10} = -0.4$. Line *m* would also, therefore, have a slope of –0.4. Only $10y + 4x = 6$ has a slope of –0.4 and would therefore be the correct answer.
217		M2-2	**Key Explanation: Choice A** is correct. The proportion/percentage of people who own houses in city *L* is represented by $\frac{2}{5}$ or 40% of the population. Since people in city *K* are twice as likely to own a house, the proportion/percentage of people who own a house in city *K* is $\frac{4}{5}$ or 80% of its population. This would imply that only $\frac{1}{5}$ of the population in city *K* rent houses. This would approximately be $\frac{1}{5} \times 623{,}000 = 124{,}600$ people in city *K*.	**Key Explanation: Choice A** is correct. The $\frac{proportion}{percentage}$ of people who own houses in city *L* is represented by $\frac{2}{5}$ or 40% of the population. Since people in city *K* are twice as likely to own a house, the $\frac{proportion}{percentage}$ of people who own a house in city *K* is $\frac{4}{5}$ or 80% of its population. This would imply that only $\frac{1}{5}$ of the population in city *K* rent houses. This would approximately be $\frac{1}{5} \times 623{,}000 = 124{,}600$ people in city *K*.
218		M2-5	**Key Explanation: Choice D** is correct. To solve for the system, use substitution method which yields $2 - \mathrm{k} = 3x^2 - 6x + 1$. Subtracting 2 and adding k to both sides of the equation would result in a quadratic equation: $0 = 3x^2 - 6x + k - 1$. For quadratic equations with two solutions, the discriminant is greater than 0 ($b^2 - 4ac > 0$). In the quadratic equation, $a = 3$, $b = -6$ and $c = k - 1$. Therefore, $(-6)2 - 4(3)(k - 1) > 0$ which would translate to $36 - 12k + 12 > 0$. Combining the constants yields $48 - 12k > 0$. Subtracting 48 from both sides of the inequality yields $-12\mathrm{k} > -48$. Dividing both sides of the inequality by –12 yields $k < 4$. Only option D is not less than 4. Therefore, it is the correct answer.	**Key Explanation: Choice D** is correct. To solve for the system, use substitution method which yields $2 - k = 3x^2 - 6x + 1$. Subtracting 2 and adding *k* to both sides of the equation would result in a quadratic equation: $0 = 3x^2 - 6x + k - 1$. For quadratic equations with two solutions, the discriminant is greater than 0 ($b^2 - 4ac > 0$). In the quadratic equation, $a = 3$, $b = -6$ and $c = k - 1$. Therefore, $(-6)^2 - 4(3)(k - 1) > 0$ which would translate to $36 - 12k + 12 > 0$. Combining the constants yields $48 - 12k > 0$. Subtracting 48 from both sides of the inequality yields $-12k > -48$. Dividing both sides of the inequality by –12 yields $k < 4$. Only option D is not less than 4. Therefore, it is the correct answer.
220		M2-13	**Key Explanation:** Using distributive property yields $x^2 + 8x + 16 = x^2 + 3x + kx + 3k$. Grouping like terms together and subtracting x2 from both sides of the equation yields $8x + 16 = 3x + kx + 3k$. Subtracting $3x$ from both sides of the equation yields $5x + 16 = kx + 3k$. For a system of equations to have no solution, the gradient on the left side of the equation and	**Key Explanation:** Using distributive property yields $x^2 + 8x + 16 = x^2 + 3x + kx + 3k$. Grouping like terms together and subtracting x^2 from both sides of the equation yields $8x + 16 = 3x + kx + 3k$. Subtracting $3x$ from both sides of the equation yields $5x + 16 = kx + 3k$. For a system of equations to have no solution, the gradient on the left side of the equation and

Page No.	Question No.	Answer No.	Error in the book	Corrected
220		M2-15	**Key Explanation: Choice B** is correct. To solve this expression, rationalize the expressions by multiplying the numerator and denominator by 2+ *i*. This yields $\frac{3+4i}{2-i}\cdot\frac{2+i}{2+i}=\frac{6+8i+3i+4i^2}{2^2-i^2}$ $=\frac{6+11i-4}{4--1}=\frac{2+11i}{5}$. Splitting the terms yields	**Key Explanation: Choice B** is correct. To solve this expression, rationalize the expressions by multiplying the numerator and denominator by 2+ *i*. This yields $\frac{3+4i}{2-i}\cdot\frac{2+i}{2+i}=\frac{6+8i+3i+4i^2}{2^2-i^2}$ $=\frac{6+11i-4}{4--1}=\frac{2+11i}{5}$. Splitting the terms yields

*M1 – Module 1
#M2 – Module 2