MATHATTACK 8

ANSWERS

Leading
Educational
Resources

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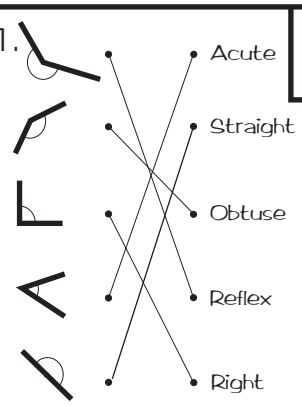
V.G. CISERA

Mathattack 8 Answers

1

1.



2 (a) 60^0 (b) 150^0 (c) 330^0

3 (a) 33^0 (b) 128^0 (c) 315^0

4 (a) 45^0 (b) 240^0 (c) 225^0
(d) 90^0 (e) 120^0 (f) 720^0

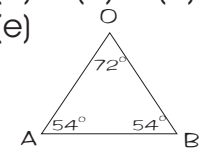
6.

Sport	Angle
Basketball	$\frac{1}{3}$ of $360^\circ = 120^\circ$
Netball	$\frac{1}{4}$ of $360^\circ = 90^\circ$
Soccer	$\frac{1}{5}$ of $360^\circ = 72^\circ$
Tennis	$= 60^\circ$
Table Tennis	$= 18^\circ$

8 (a) $a = 109^0$ $b = 71^0$
(b) $c = 57^0$ $d = 57^0$
(c) $m = 61^0$ (d) $\phi = 128^0$
(e) $f = 60^0$

2

1 (a) pentagon
(b) 5 (c) 5 (d) 72^0
(e)



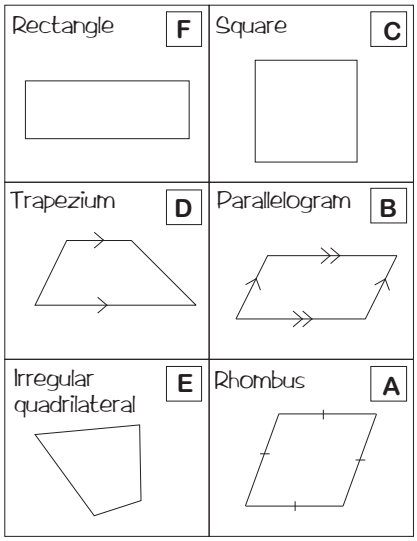
(f) 108^0 (g) 540^0 (h) 72^0

2.

Shape	Name	Sum of internal angles
	triangle	180°
	rectangle or square	360°
	hexagon	720°

3. A square is a type of rhombus which is a type of parallelogram which is a type of quadrilateral.
4. SCALENE ISOSCELES EQUILATERAL
5. The diagonals of a square, kite and rhombus.

6.



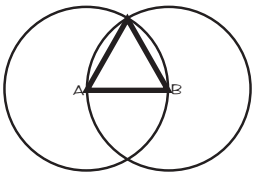
7 (a) isosceles (b) scalene
(c) equilateral

8 (a) 95^0
(b) $p = 55^0$ $q = 70^0$ $r = 55^0$
(c) $a = 70^0$ $b = 40^0$

3

1. $\angle ABC = 90^0$
A right-angled triangle.(or scalene)

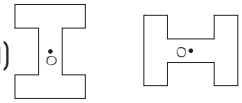
2.



6. ANGLE SPACE BISECT OCTAGON

4

1.
(a)



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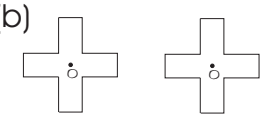
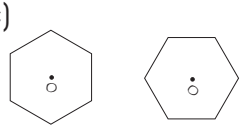
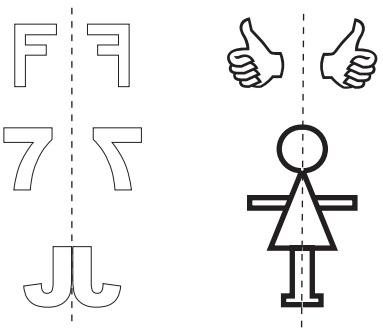


(c)



2 (a) 180^0 (b) 90^0
(c) 60^0 (d) 360^0

3.



4. 5 o'clock

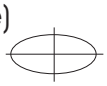
5 (a)

(b)

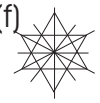
(c)

(d)

(e)



(f)



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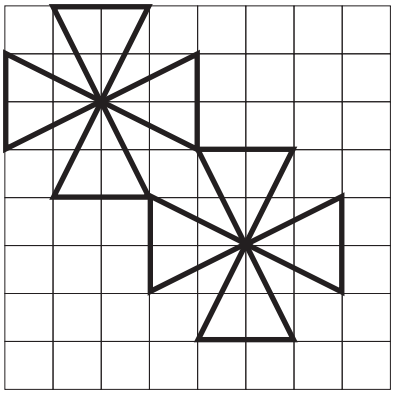
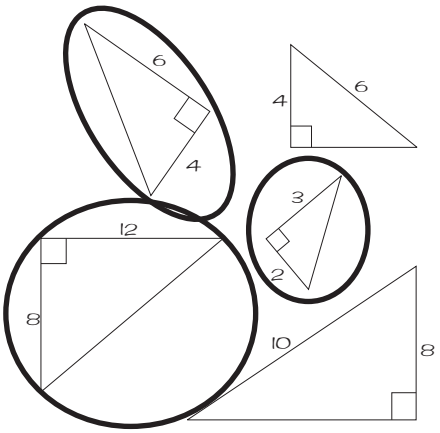


5

5.



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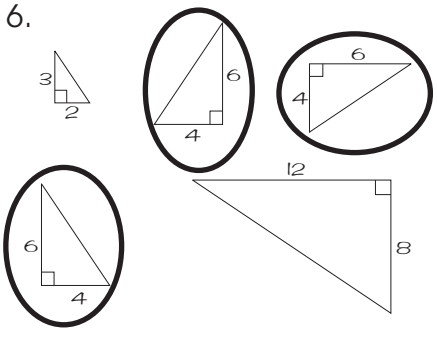


7 (a) true (b) false (c) true
8. 1.4m
9. 5 m
10. 30 cm
11. 1/5 scale factor.

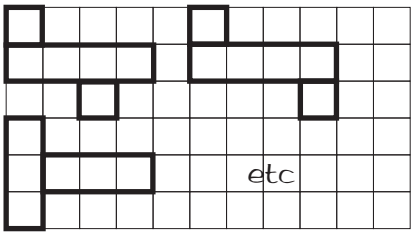
Mathattack 8 Answers

6

1.

a	b	c	d	e	f
2 cm	4 cm	5 cm	3 cm	3 cm	5 cm

TRIANGULAR PRISM

2. 

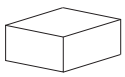
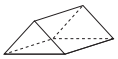
3. C

4 (a) 6 (b) 6 cm (c) 3 cm
(d) 216 cm^3 (e) 36 cm^3

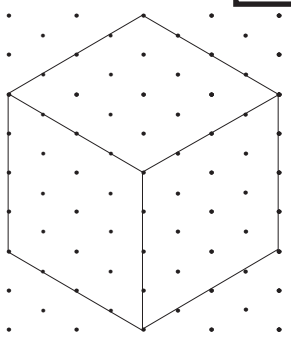
5 (a) Three dimension

6 (a) CD, EF and GH
(b) CDHG (c) AD
(d) CG, BF, AE or DH

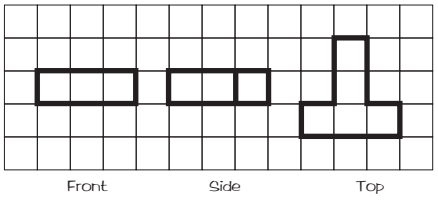
7.

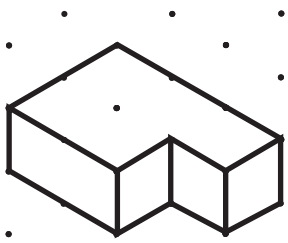
	V	F	E	V+F-E
	8	6	12	2
	5	5	8	2
	6	5	9	2
	16	10	24	2

7

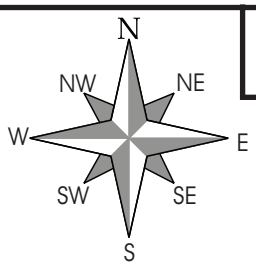
1 (a) 64 blocks
(b) 4 blocks
(c) 

3. SOLID VIEW SKETCH
ISOMETRIC

5. 

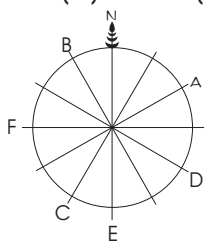
6. 

8

1. 

2. South east

3 (a) 16 km (b) 2 km (c) South

4. 

5.

Cow	N 40°E
Tree	N 50°W
Car	S 30°W

6.

Compass Direction	True Bearing
E	90°
S 20° W	200°
W	270°
S 20° E	160°
NW	315°
NE	45°
N 50° E	50°
SE	135°
S	180°
N 10° W	350°

7.

Compass Points		Angle Between
E	SW	135°
N 20° E	N 70° E	50°
N 30° W	S	210°
N	S 20° E	160°
S 10° E	N 60° W	130°

8.

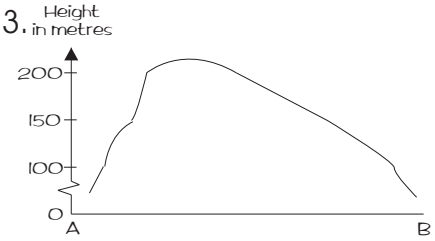
Route	Compass Direction	True Bearing
Melbourne to Sydney	N 60°E	60°
Brisbane to Perth	S 80°W	260°
Hobart to Darwin	N 20°W	340°

9

9. EAST WEST SOUTH NORTH
COMPASS

1. Pig 400 m
Hen 370 m
Horse 250 m

2. 16.5 km

3. 

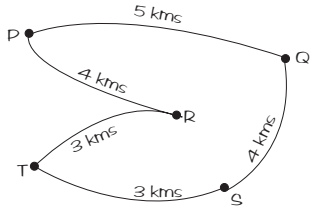
4 (a) 7 cm (b) 7 m
(c) 4 cm (d) 4 m

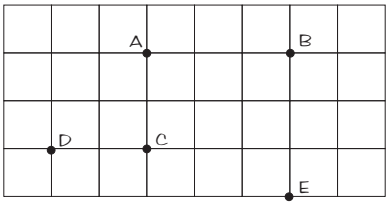
5 (a) D 3 R E 1 S
A 6 P F 5 Q

(b) B 1

(c) Bridge 1 B5 Bridge 2 F4

(d) D4 lake C2 tree

(e) 

6. 

Mathattack 8 Answers

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1 (a) 2981 (b) 1747
(c) 4628 (d) 2561
2. 1538
3. 4828
4. 6865
5 (a) 237 kg (b) 79 kg
6.

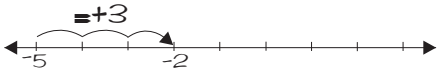
X	3	4	6	7	10	11
2	6	8	12	14	20	22
5	15	20	30	35	50	55
8	24	32	48	56	80	88
9	27	36	54	63	90	99
12	36	48	72	84	120	132
1	3	4	6	7	10	11

7 (a) 15 (b) 24 (c) 33 (d) 82
(e) 51
8. 12
9. 3 705
10. 4 052
11. 217
12. 1800
13. 15
14 (a) 600, 3600 (b) 14, 22
15 (a) 2 248 358 (b) 217
(c) 42 804 (d) 64 484
(e) 216 000 (f) 16 425 kg

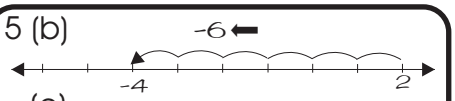
1 2	3	2 5	8	■	3 1	4 7	2	5 9
5	■	3	■	■	■	2	■	0
6 6	7 4	■	8 2	■	9 1	■	10 2	0
■	0	■	11 1	3	0	■	1	■
■	12 5	13 7	6	■	14 1	15 2	1	■
16 1	■	5	■	■	■	2	■	17 5
18 8	19 6	0	20 2	■	21 1	5	22 5	1
■	1	■	23 4	0	2	■	0	■
24 2	5	0	■	■	■	25 9	0	0

11

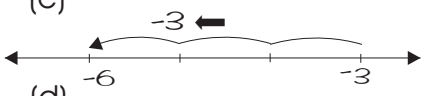
1 (a) -3, -7, -11
(b) 1, 1/2, 1/4
(c) -16, 32, -64
(d) -1, 0, 1
2 (a) > (b) < (c) < (d) >
3. -10, -6, 0, 2, 7
4 (a) 19^0C (b) 50^0C (c) 12^0C
5 (a)



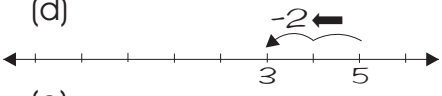
5 (b)



(c)



(d)



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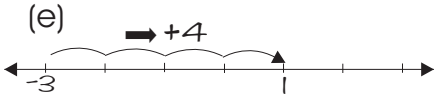
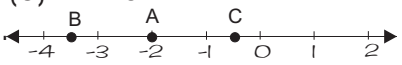


6 (a) 4^0C (b) -12^0C
7 (a) -7, -6, -5, -4, -3
(b) -4, -3, -2, -1, 0
8. -$74
9. -51^0C
10. 280^0C
11 (a) 1851 years (b) BC 212
(c) AD 1642
12.



13. 550 m
14. 4.0 m

12

1 (a) -7 (b) 5
(c) -100 (d) -1
(e) -3 (f) 72 (g) 8
(h) 0 (i) -45
2 (a) -4 (b) -2 (c) 3
3

X	-4	-2	0	2	4
-4	16	8	0	-8	-16
-2	8	4	0	-4	-8
0	0	0	0	0	0
2	-8	-4	0	4	8
4	-16	-8	0	8	16

4 (a) 21 (b) -53 (c) -2 (d) 0
5 (a) -2 (b) 7 (c) -9 (d) 14
(e) -5
6. -9
7.-16 or 16
8 (a) 36 (b) 25 (c) -8 (d) -120
(e) -9 (f) -15
9 (a) -4 (b) -9 (c) 7 (d) -8
(e) -1 (f) 5
10 (a) 3 (b) -2 (c) -1 (d) -1
(e) -10 (f) 11 (g) 32 (h) 12
11 (a) 19.5 (b) 50.653
(c) 46.12 (d) -31.5
(e) 77.85
12 (a) -6 (b) 5 (c) 0 (d) -2
(e) 1 (f) 10

13. VALUE SIGN PERFORM
14 (a) PROTON (b) ELECTRON

13

1.. 2/5
2. 18/5
3. 6 2/9
4. 9/10
5. 15/25 = 30/50
6. 2/3 is larger.
7. Netball 1/4 Squash 1/8
Tennis 3/8 Soccer 1/4
8 (a) 4/5 (b) 1/7 (c) 1 3/20
(d) 1/8 (e) 6 1/10 (f) 4 1/8
(g) 2 29/40
9. 30 blocks
10 (a) 1/8 (b) 6/35 (c) 9
(d) 1/6 (e) 6 (f) 4/9
(g) 8/9 (h) 3/20
11 4 2/3
12. 5 5/6
13 (a) $25 (b) 200 kg
(c) 360 students (d) 1500 kg
14. Rob $2400 Fiona $2000
Nathan $1600

14

1 (a) 14.34 (b) 15.27
(c) 7.155
(d) 29.396
(e) 32.87
2 (a) 6.83 (b) 0.36 (c) 5.00
3 (a) 18.6 (b) 70.048
(c) 15.33 (d) 0.18
(e) 0.25 (f) 0.008
4 (a) 0.7 (b) 0.27 (c) 0.04
(d) 5.725
5 (a) 0.375 (b) 3.778
6 (a) 1/20 (b) 7 9/50
7 (a) 54.02 (b) 0.98
8 (a) 780 (b) 3 827.1 (c) 0.52
(d) 30 (e) 3.7 (f) 0.892
(g) 0.2783 (h) 0.005 (i) 0.021
(j) 0.17
9 (a) 1.12 (b) 0.1235
10. $1.75
11. $2.80
12 (a) 7.8×10^4
(b) 8.23×10^6
13. 0.85

Mathattack 8 Answers

15

1.

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
1/10	0.1	10%
1/5	0.2	20%
7/10	0.7	70%
$\frac{3}{4}$	0.75	75%
1/100	0.01	1%
3/10	0.3	30%
21/100	0.21	21%
$\frac{7}{8}$	0.875	87.5%
1/3	$0.\dot{3}$	$33\frac{1}{3}$%

2 Maths 75% Science 80%
English 70% Art 60%
Best subject is Science
3 (a) 2.2 (b) 0.005
4 (a) 1% b) 75% (c) 60%
(d) 12%
5 (a) 25% (b) 75%
6. 70%
7 (a) 16 (b) 15 (c) 12 (d) 3
8. 25 ml.
9. $2 520
10 (a) $384 (b) $13.20
11. $225
12. 2.5 ml.
13. 5%

16

1 (a) $10 : $20
(b) $20 : $80
(c) $180 : $20
(d) $10 : $20 : $30
(e) $80 : $100
2 (a) 2/5 (b) 60%
3 (a) 1 : 3 (b) 8 : 4 : 1
(c) 5 : 3 (d) 3 : 1
4. 1 : 4
5. 3 litres.
6. Adrian $60, Jeremy $100.
7. 1350 students.
8. 5 m.
9 (a) sand 10 kg, aggr. 20 kg
(b) cement 4kg, sand 8 kg,
aggregate 16 kg.
10. 100 ml.
11. 150 dogs.
12. 3 : 1
13. 1 : 3
14. 4 : 3

17

1. $5
2. B
3. 600 m.
4 (a) 110 kg (b) 154 kg.
5 (a) 200 km (b) 10 litres.
6. Car A
7. $150
8 (a) 6 ml (b) 11 ml.
9. $1488
10 (a) 40 mins (b) 18 000 litres
(c) 5 litres
11 (a) $320 (b) $225

18

1 (a) B (b) D (c) B
(d) A (e) C
2. C
3. D
4. B
5. C
6. NSW B WA C TAS B
7. C
8 (a) B (b) A
9. D
10. B
11. C
12. B

19

1 (a) 30 mm
(b) 0.78 cm
(c) 500 m (d) 7.8cm
(e) 0.380 km (f) 50 m
2. 1480 m.
3. 35 m.
4. 60 cm.
5. 2.72 m.
6. 6 m.
7. 1 000 000 mm.
8 (a) 8 cm (b) 17 cm
(c) 372 cm (d) 90 cm
9 (a) circle 87 cm
(b) circle 5 m
10 (a) circle 800 km
(b) circle 200 cm
11 (a) 35.8 cm
(b) (2a + 2b) units of length
12. length 150 m width 50 m
13. (a) 44.0 cm (b) 6.3 m
14 (a) 5.1 m (b) 17.9 cm

20

1. 1 cm^2 = 100 m^2
1 m^2 =10 000 cm^2
1 hectare = 10 000 m^2
2 (a) 64 m^2 (b) 62 m^2
(c) 22.5 cm^2 (d) 78 cm^2
3 (a) 48 m^2 (b) 39 m^2
4 (a) Area = m x n
(b) Area = a x b - c x d
5. 30 m
6. 5 cans
7. $200
8 (a) d^2 area units (b) 9
9 (a) 28.3 m^2 (b) 50.3 cm^2
10 (a) 37.7 m^2 (b) 21.5 cm^2

21

1 (a) 32 cm^2
(b) 44 cm^2
2. 114 cm^2
3. 48 cm^2
4 (a) 10 m^2 (b) $200 (c) C
5. 1809.6 cm^2
6. 659.7 cm^2
7. 45 m^2
8 (a) H = 256 mm
W = 201 mm
(b) 51 456 mm^2
(c) 3217 mm^2
(d) 57 890 mm^2

22

1 (a) 1000 cm^3
(b) 1000 litres
(c) 1000 000 cm^3
2 (a) 3 litres (b) 4000 litres
(c) 830 litres (d) 0.5 litres
3 (a) 30 m^3 (b) 120 m^3
4 (a) 1.08 m^3 (b) 108 buckets
5 (a) 600 000 cm^3
(b) 12 mins
6. 40 days.
7. 4 teaspoons.
8. C
9. C
10 (a) 2.4 m^3 (b) $360
11. 84 m^3

Mathattack 8 Answers

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1. D
2. B
3. C
4.

12 hour format	24 hour format
9.30 am	0930
12.30 pm	1230
3.00 pm	1500
11.30 pm	2330
5.15 am	0515
3.45 pm	1545

5 (a) 1.23,1.30,1.31,1.36,1.41
(b) 9.18 am and 9.27 pm
(c) 7 hours and 30 minutes.
6 (a) 2062 (b) yes
7. B
8 (a) 9 hours and 54 minutes
13 hours and 15 minutes
(b) 3 hours and 21 minutes
9.

Name	Date left	Date returned
Sue	25 Jan	23 Feb
Hollie	31 Jan	13 Feb
Youssry	2 Feb	28 Feb

Sue had the longest holiday.
10. 21st February 1986

24

1 Answers will vary considerably.
2. 1/5
3. 1/2
4 (a) i 2/9 ii 1/3 iii 4/9
(b) 5/9 (c) 1/4
5 (a) i 8/31 ii 16/31 (b) A
6 (a)

1st cut	2nd cut	3rd cut
R	G	Y
R	Y	G
G	R	Y
G	Y	R
Y	R	G
Y	G	R

(b) yes (c) 1/6 (d) 5/6

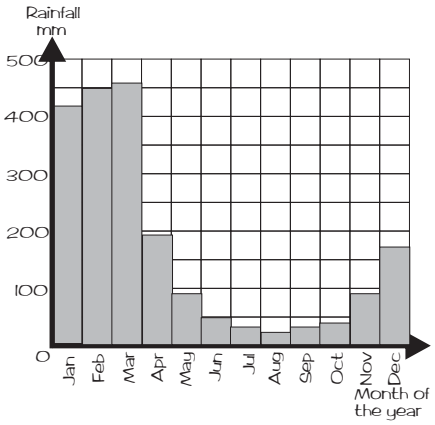
7 (a)

Before bridge	After bridge
A	D
A	E
A	F
B	D
B	E
B	F
C	D
C	E
C	F

(b) 5 (c) 5/9

25

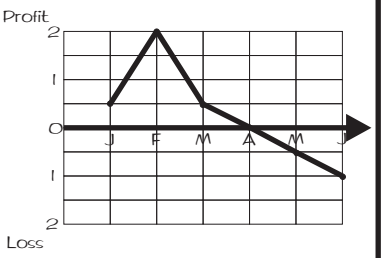
1.



(a) 2040 mm (b) 170 mm
(c) 290 mm
2 (a)

	Jan	Feb	Mar	Apr	May	Jun
Profit or Loss (P or L)	P	P	P	-	L	L
Amount in $1000's	0.5	2.0	0.5	0	0.5	1.0

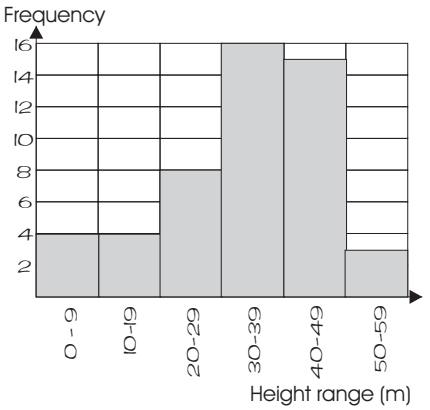
(b) Feb (c) Profit
(d)



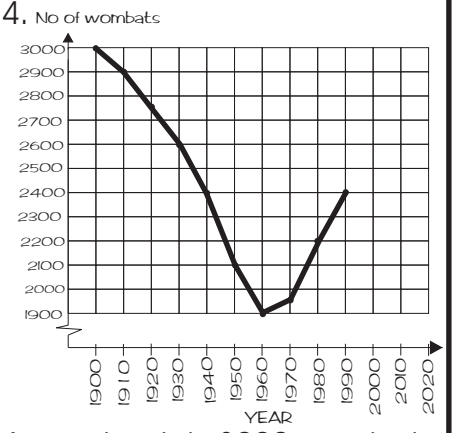
3.

Height range	Tally	Frequency
0 - 9		4
10 - 19		4
20-29		8
30-39		16
40-49		15
50-59		3
		50

3.



Range of tree heights = 54 m
4.



Approximately 3000 wombats

26

1.

stem	leaf
1	2 3 7
2	0 1 2 3 5 8
3	0 3 8

2. median 23 range 24
upper quart 30
lower quart 13
inter quart 17 mean 22
3. median 122 cm
range 45 cm
upper quart 138 cm
lower quart 116 cm
inter quart 22 cm
mean 125
4. STEM LEAF MEDIAN
5 (a) 20 (b) 2 (c) 10 kg
(d) 200 kg (e) 10 (f) 8
6 (a)

stem	leaf
1	3
2	0
3	
4	
5	8 5
6	9 2 0 3
7	4 2 8 3 5 6 3
8	1 1 7 0 3 7
9	9 1 0
10	0

stem	leaf
1	3
2	0
3	
4	
5	5 8
6	0 2 3 9
7	2 3 3 4 5 6 8
8	0 1 1 3 7 7
9	0 1 9
10	0

(b) 75 (c) 72

Mathattack 8 Answers

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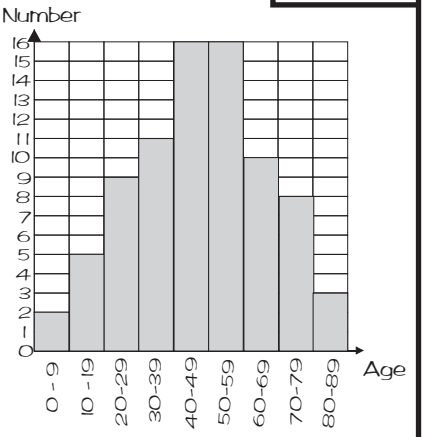
1 (a) 59 (b) 1540
(c) 77 (d) 4

2.



(a) 80 (b) 47

3 (a) Javed $445 Evan $565
(b) Javed $22.25
Evan $28.25
(c) Javed 89 hrs Evan 113 hrs

4 (a)

	Mean	Median	Mode
Fiona	35	5	0
Bridget	33	27	27

(b) Bridget-because she was more consistent.

5 (a) $400 (b) $800
(c) The median- better reflects wages of employees.

28

1 (a)

n	0	1	2	3	4
m	-1	2	5	8	11

(b) m = 35 (c) n = 20

2 (a) $90 (b) 10
(c)

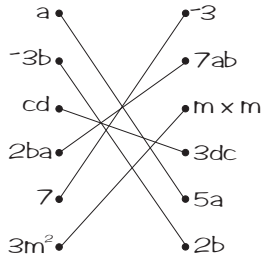
B	1	2	5	10	20	50
P	14	18	30	50	90	210

3 (a) i b=27 ii b =-3 iii b=10.5
(b) i a = 1 ii a = -2
4 (a) B (b) $24
5 (a) P = M + N (b) Q = RT
(c) j = k/2 - 2 (d) m = $\sqrt{q}$
(e) $y = (a + b)^2$
6 (a) 2n (b) n + 3 (c) n - 6
(d) 3n - 5 (e) Lucy 20
Robert 40 Jane 23
Cynthia 55
7 (a) $100 (b) 22 weeks
(c) B = 5w + 50
8 (a) 500 - C (b) (500 - C)/100
9. The area of a trapezium is equal to half the sum of the parallel sides multiplied by the distance between them.

29

1 (a) 3t (b) 5y
(c) 3a + 2b
(d) 3m + 3n = 3(m + n)

2.

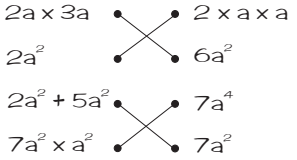


3 (a) 5a (b) 8y (c) 4c (d) -2d
(e) -3y (f) -m (g) -5n (h) 2t
(i) -8e (j) 0 (k) $-n^2$
4 (a) 10m + 2n (b) 3a + 3c
(c) 6b (d) 16n + 5d
(e) -8n +10p or 10p - 8n
(f) -4a + 7 or 7 - 4a
(g) 2cd + 5c (h) 4ab + 2a
(i) 5m + 5n = 5(m + n)
5. 10y units of length.
6 (a) $4e (b) $8e
7 (a) Lena = 2f votes
Martin = (f + 4) votes
(b) f + 2f + f + 4
(c) 4f + 4 = 4(f + 1) votes
(d) Frida 19 votes
Lena 38 votes
Martin 23 votes
8. $4a^2 - a^2 = 3a^2$
9 (a) 2n (b) 6n (c) 10n
(d) 19n Elvira was 6 yo.
10. Rufus 11 kg
Bruno 6 kg
Dudley 3 kg

30

1 (a) 6ab (b) 42mn
(c) 24cy (d) 24abc
2 (a) d^4 (b) $10t^3$
(c) t^5 (d) $20n^8$ (e) $4w^5$
(f) $6a^2b^2$ (g) $4a^4$ (h) $1/3\ w^2$
(i) $48p^3$ (j) y^2

3.

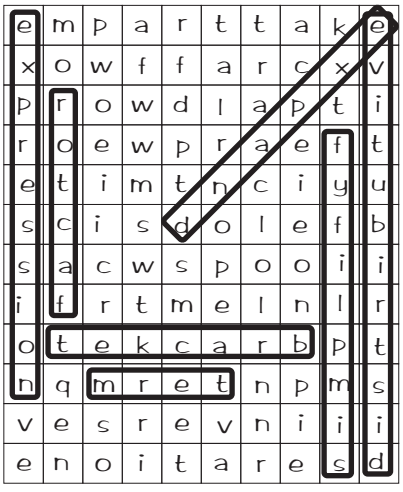


4 (a) v^3 (b) 5^t (c) m^n
5 (a) a^{x+y} (b) a^{x-y}
(c) $5a^y$
6 (a) a^{10} (b) $36a^{10}$ (c) m^6
(d) m^6 (e) $16c^{12}$ (f) m^{26}
(g) $8a^6$ (h) 1 (i) 1

7 (a) 2m (b) 4t (c) $2m^2/3$
(d) 3e/2 (e) 9f (f) 2 (g) r^3
(h) $2m^2$
8 (a) y^3 (b) $24y^3$
9 (a) m/n (b) $3a^2$ (c) 5c + 4
10 (a) 2t (b) $2t^2$ (c) 3t
(d) 20 yo.
11 (a) $6n^2$ (b) $c^2 - t^2$
(c) $\pi b^2 - \pi a^2 = \pi(b^2 - a^2)$

31

1. All are true.
2 (a) 3m + 6
(b) 4y - 32
(c) 6a + 4 (d) 18m - 12n
(e) 72h + 27 (f) $d^2 + 2d$
(g) $3y^2 - 15y$ (h) $12m^2 - 18mn$
(i) $5c^5 - 2c^2d^2$
3 (a) 7p + 26 (b) 5z
(c) -4a - 16 (d) 2a - 9
4 (a) 4 (b) 5 (c) m (d) 2y
(e) a (f) 5d
5 (a) 2(g + 3) (b) 4(2m-1)
(c) 16(c - d) (d) n(n - 3)
(e) 2y(2y - 1) (f) 2m(3n + 2)
(g) 2e(ef + 3) (h) 4gh(h - 1)
6 (a) 8g balls
(b) 8g - 40 = 8(g - 5)
7 (a) pu sheep
(b) pu + 15p = p(u + 15)
8.



Mathattack 8 Answers

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1 (a) 8m/9 (b) 4d/5
(c) 9pr (d) $4m^3/5$
2 (a) 1 (b) 5/4
(c) $3g^2/10$ (d) $4/n^2$
(e) $5a^2/6b^2$ (f) $p^2q^2r/4$
3 (a) 2 (b) m/6 (c) 3t/8
4 (a) 9a/12 (b) 5m/25
5 (a) (m + 2)/4 (b) (2a + 3b)/4
6 (a) h/2 (b) 5a/7 (c) y/4
(d) 5t/6 (e) 3p/10 (f) 6p/5
(g) 7k/4 (h) 5v/12
7 (a) (2w + 4)/3 (b) (3n - 1)/5
8 (a) (4y - 1)/4 (b) (4m + 35)/21
(c) (10a - 19)/12
(d) (3c + 12)/20

33

1 (b) 5 (c) 25 (d) 9
(e) 18 (f) 1
2. 25 goals
3 (a) a = 5 (b) y = 8 (c) b = 12
(d) m = 5 (e) n = 10
(f) c = 12 (g) n = 0
(h) d = 2
4. length = 10 m width = 5 m
5. 5 more loaves.
6. 60 chocolates.
7. w = 4 cm
8 (a) v = 2/5 (b) z = -1.4
(c) m = 16.1 (d) a = 6
(e) n = 4 (f) m = -2 1/6
9. 12 goals (5 behinds)

34

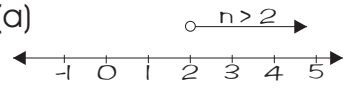
1 (a) c = 2 (b) y = 2
2 (a) 4b = 2b + 60
(b) b = 30 kg
3. 10 grams
4 (a) m = 70 (b) y = 2
(c) a = 4 (d) t = 10
(e) a = 11 (f) m = 6
5 (a) 5c + 30 = 4c + 40
(b) c = 10 kg

35

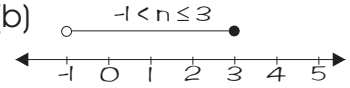
1 (a) P = 4t
(b) P = 2a + 2b
(c) $C = 2\pi r$
2 (a) $A = t^2$ (b) A = ab
(c) $A = \pi r^2$
3 (a) m = dv
(b) F = w + a
(c) P = s - c
4 (a) P = 64 (b) q = 12
(c) P = 14 (d) A = 4
(e) M = 2 (f) F = 35
4 (g) y = 5 (h) V = 42
(i) B = -9
5 (a) n = m - p (b) R = Q + S
(c) $D = C/\pi$ (d) D = 2R
(e) g = (F - 5)/2
6 (a) C = 190n + 20
(b) $19 020
7 (a) A (b) $200

36

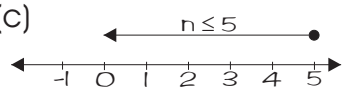
1. (a) 3, -3 (b) 2, 3
(c) 0, 4
2 (a) 5, -5 (b) 1, 2
3 (a) $n^2 + 2n = 3$ (b) 1, -3
4. a = 2 b = 4 c = 2 or
a = 0 b = 0 c = 0
5 (a) 5, 6, 7 (b) 5.1, 5.2, 5.3
(c) -7, -6, -5
6. 10 and 6 and many others
7 (a) 12, 24 (b) 16, 36
8 (a) < (b) > (c) > (d) >
(e) > (f) <
9. (a) $-4 \le n < 1$
(b) $0 \le n \le 6$
(c) $-3 < n$ or $n > -3$
(d) $-2 \ge n$ or $n \le -2$
(e) $5 < n$ or $n > 5$
10. (a)



(b)



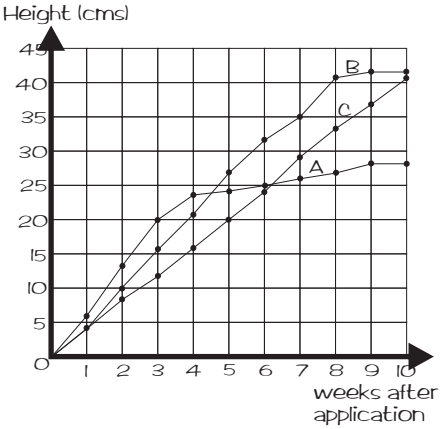
(c)



11. Many solutions. Some are:
a = 10 b = 20 etc etc
12. There are 4 possible :-
c = 8 and d = 9
or c = 7 and d = 9
or c = 9 and d = 7
or c = 9 and d = 8
13 (a) $3 \le m \le 17$
(b) $2 \le m \le 72$
14. $30 000 ≤ w ≤ 50 000

37

1 (a) Eucalypt 1 m.
Oak 3 m.
(b) The eucalypt.
(c) Eucalypt 11 m.
Oak 7 m.
(d) 3 years.
2 (a) 9.30 am. (b) 2 stops.
(c) 30 mins. (d) 200 km.
(e) 3.5 hours.
3 (a) Kathryn (b) Maree
(c) 180 m (d) 200 m
(e) 25 seconds
(f) 8 metres per sec.
4.



(a) A (b) B (c) probably C

Mathattack 8 Answers

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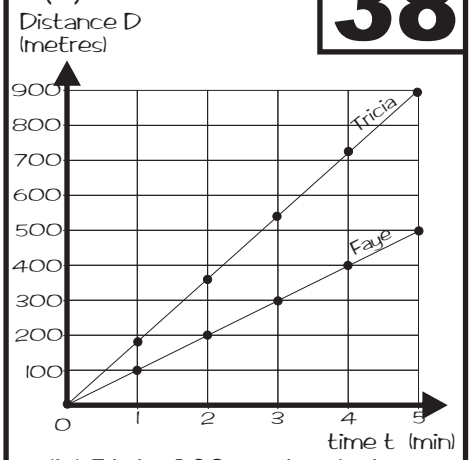
1 (a)



(b) Tricia 180 metres/min
Faye 100 metres/min

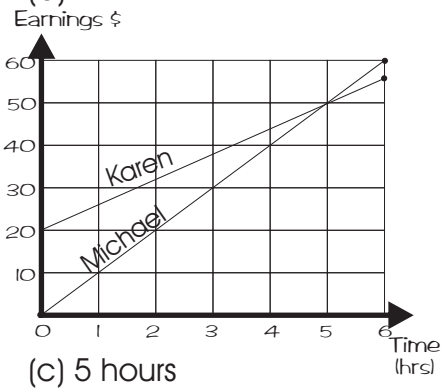
(c) Tricia D = 180t
Faye D = 100t

(d) Tricia 1800 m
Faye 1000 m

2 (a)

Time (hrs)	1	2	3	4	5	6
Michael	10	20	30	40	50	60
Karen	26	32	38	44	50	56

(b)

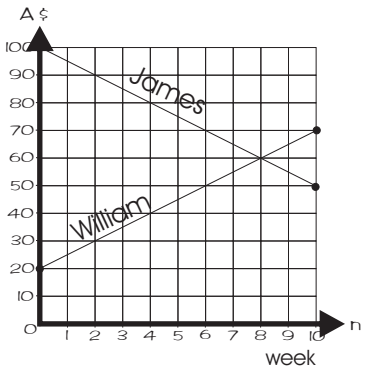


(c) 5 hours

(d) This is a subjective question. Karen, if you didn't want long hours. Michael, if you did want to work long hours.

3 (a) James A = 100 - 5n
William A = 20 + 5n

(b)



3 (c) 8 weeks

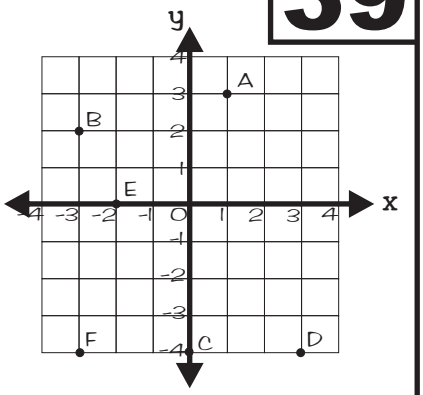
4. Circle y = 3x
y + x = 1 and y = 5 - 2x

5. (b) C (c) E (d) B (e) A

6. A y = x B y = x - 1
C y = 1 - x

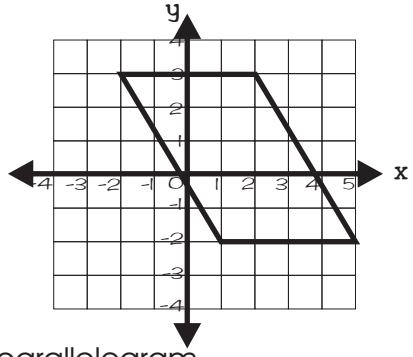
39

1.



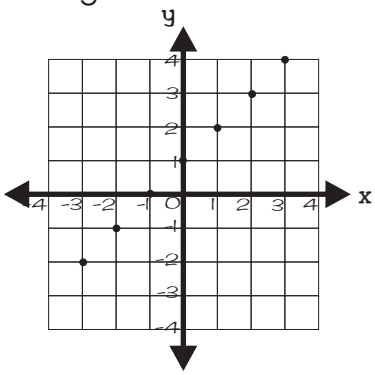
2 A (3, 0) B (4, 3) C (0, 3)
D (0, 0) E (-2, 1) F (-2, -2)
G (2, -3) H (-3, 3)

3.



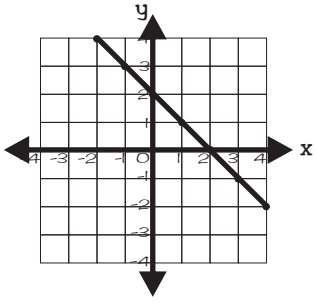
parallelogram

4.

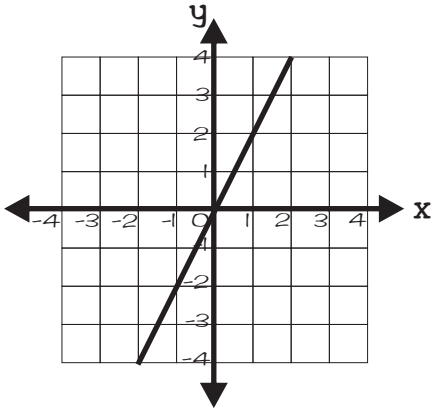


5.

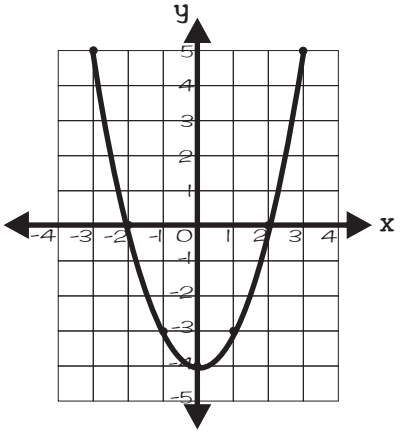
x	-2	-1	0	1	2	3	4
y	4	3	2	1	0	-1	-2



6. (1, 2) (0.5, 1) (-1, -2) (-2, -4)



7.



8.

x	-3	-2	-1	0	1	2	3
y	-7	-5	-3	-1	1	3	5