

ACCUPLACER

11. A. The correct solutions are $-8 \pm \sqrt{31}$. The equation can be solved by completing the square.

See Lesson: Solving Quadratic Equations.

$$x^2 + 16x = -33$$

Subtract 33 from both sides of the equation.

$$x^2 + 16x + 64 = -33 + 64$$

Complete the square, $\left(\frac{16}{2}\right)^2 = 8^2 = 64$.

Add 64 to both sides of the equation.

$$x^2 + 16x + 64 = 31$$

Simplify the right side of the equation.

$$(x + 8)^2 = 31$$

Factor the left side of the equation.

$$x + 8 = \pm\sqrt{31}$$

Apply the square root to both sides of the equation.

$$x = -8 \pm \sqrt{31}$$

Subtract 8 from both sides of the equation.

12. D. The correct solutions are $-\frac{5}{2}$ and $-\frac{2}{3}$. The equation can be solved by factoring. **See Lesson: Solving Quadratic Equations.**

$$(2x + 5)(3x + 2) = 0$$

Factor the equation.

$$(2x + 5) = 0 \quad (3x + 2) = 0$$
 Set each factor equal to 0.

$$2x + 5 = 0$$

Subtract 5 from both sides of the equation and divide both sides of the equation by 2 to solve.

$$2x = -5$$

$$x = -\frac{5}{2}$$

$$3x + 2 = 0$$

Subtract 2 from both sides of the equation and divide both sides of the equation by 3 to solve.

$$3x = -2$$

$$x = -\frac{2}{3}$$

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