

Lesson 16 Practice Problems

1. For each equation, identify the values of a , b , and c that you would substitute into the quadratic formula to solve the equation.

a. $3x^2 + 8x + 4 = 0$

b. $2x^2 - 5x + 2 = 0$

c. $-9x^2 + 13x - 1 = 0$

d. $x^2 + x - 11 = 0$

e. $-x^2 + 16x + 64 = 0$

2. Use the quadratic formula to show that the given solutions are correct.

a. $x^2 + 9x + 20 = 0$. The solutions are $x = -4$ and $x = -5$.

b. $x^2 - 10x + 21 = 0$. The solutions are $x = 3$ and $x = 7$.

c. $3x^2 - 5x + 1 = 0$. The solutions are $x = \frac{5}{6} \pm \frac{\sqrt{13}}{6}$.

3. Select **all** the equations that are equivalent to $81x^2 + 180x - 200 = 100$

- A. $81x^2 + 180x - 100 = 0$
- B. $81x^2 + 180x + 100 = 200$
- C. $81x^2 + 180x + 100 = 400$
- D. $(9x + 10)^2 = 400$
- E. $(9x + 10)^2 = 0$
- F. $(9x - 10)^2 = 10$
- G. $(9x - 10)^2 = 20$

(From Unit 7, Lesson 14.)

4. *Technology required.* Two objects are launched upward. Each function gives the distance from the ground in meters as a function of time, t , in seconds.

Object A: $f(t) = 25 + 20t - 5t^2$ Object B: $g(t) = 30 + 10t - 5t^2$

Use graphing technology to graph each function.

- a. Which object reaches the ground first? Explain how you know.
- b. What is the maximum height of each object?

(From Unit 6, Lesson 6.)

5. Identify the values of a , b , and c that you would substitute into the quadratic formula to solve the equation.

a. $x^2 + 9x + 18 = 0$

b. $4x^2 - 3x + 11 = 0$

c. $81 - x + 5x^2 = 0$

d. $\frac{4}{5}x^2 + 3x = \frac{1}{3}$

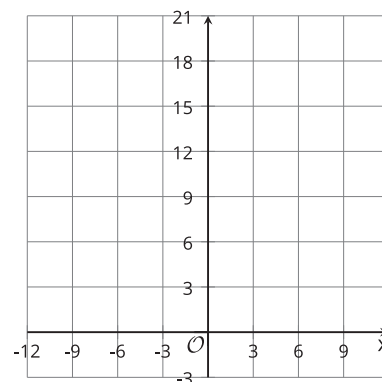
e. $121 = x^2$

f. $7x + 14x^2 = 42$

6. On the same coordinate plane, sketch a graph of each function.

○ Function v , defined by $v(x) = |x + 6|$

○ Function z , defined by $z(x) = |x| + 9$



(From Unit 4, Lesson 14.)