

Chapter 10
Form E

For problems 1 – 2, simplify each number.

1. $\sqrt{-169}$
a. 13 b. $13i$ c. ± 13 d. -13
2. $\sqrt{-128}$
a. $-8\sqrt{2}$ b. $-4\sqrt{2}$ c. $8\sqrt{2} i$ d. $\pm 8\sqrt{2} i$
3. Solve by the square root property: $(2x - 7)^2 = 49$.
a. $\{7, 0\}$ b. $\{7\}$ c. $\left\{\frac{7}{2}\right\}$ d. $\{0\}$
4. Solve by completing the square: $x^2 - 10x - 5 = 0$.
a. $\{5, 2\}$ b. $\{5 \pm \sqrt{30}\}$ c. $\{-5 \pm \sqrt{30}\}$ d. $\{-5, 2\}$
5. Solve by the quadratic formula: $4x^2 - 7x + 5 = 0$.
a. $\left\{\frac{-7 \pm \sqrt{31}i}{8}\right\}$ b. $\left\{\frac{7 \pm \sqrt{31}i}{8}\right\}$ c. $\left\{\frac{7 \pm \sqrt{129}i}{8}\right\}$ d. $\left\{\frac{-7 \pm \sqrt{129}i}{8}\right\}$

For problems 6 – 11, solve each equation by the method of your choice.

6. $25x^2 - 64 = 0$
a. $\left\{\pm \frac{8}{5}\right\}$ b. $\left\{\pm \frac{5}{8}\right\}$ c. $\left\{\pm \frac{64}{25}\right\}$ d. $\left\{\pm \frac{25}{64}\right\}$
7. $x^2 + 6x - 1 = 0$
a. $\{3 \pm \sqrt{10}\}$ b. $\{3 \pm \sqrt{5}\}$ c. $\{-3 \pm \sqrt{5}\}$ d. $\{-3 \pm \sqrt{10}\}$
8. $x^2 - 4x = -3$
a. $\{-3, -1\}$ b. $\{1, 3\}$ c. $\{2 \pm \sqrt{7}\}$ d. $\{2 \pm i\}$
9. $(x - 8)^2 = 27$
a. $\{19, 35\}$ b. $\{8 + \sqrt{27}\}$ c. $\{\pm \sqrt{15}\}$ d. $\{8 \pm 3\sqrt{3}\}$
10. $(x - 3)(2x + 2) = -15$
a. $\left\{-12, -\frac{17}{2}\right\}$ b. $\{1 \pm \sqrt{7}i\}$ c. $\{1 \pm 2\sqrt{14}i\}$ d. $\left\{\frac{2 \pm \sqrt{14}i}{2}\right\}$

11. $25x^2 + 9 = 0$

a. $\left\{\pm\frac{3}{5}\right\}$

b. $\left\{-\frac{3}{5}\right\}$

c. $\left\{\pm\frac{3i}{5}\right\}$

d. $\left\{\pm\frac{\sqrt{3}i}{5}\right\}$

12. The x -intercepts of $y = 2x^2 - 10x + 8$ are:

a. -4 and -1

b. -4 and 1

c. 1 and 4

d. -1 and 4

13. The vertex of $y = -3x^2 - 4x + 7$ is:

a. $\left(-\frac{2}{3}, \frac{25}{3}\right)$

b. $\left(\frac{2}{3}, \frac{25}{3}\right)$

c. $\left(\frac{2}{3}, \frac{9}{3}\right)$

d. $(-1, 8)$

14. The y -intercept of $y = -2x^2 + 10x - 8$ is:

a. -8

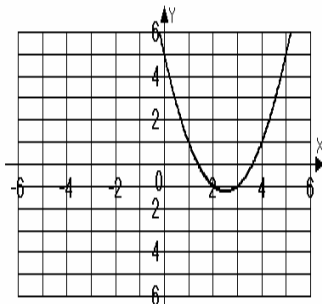
b. 8

c. 4

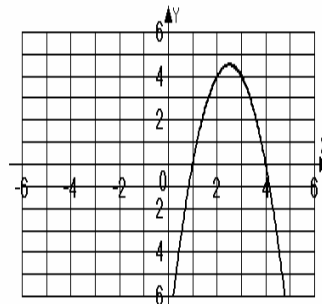
d. -5

15. The graph of $y = -2x^2 + 10x - 8$ is:

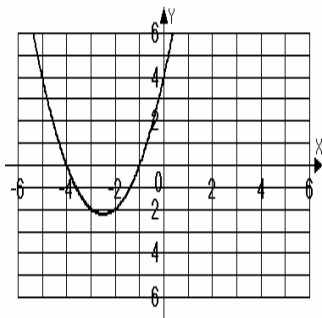
a.



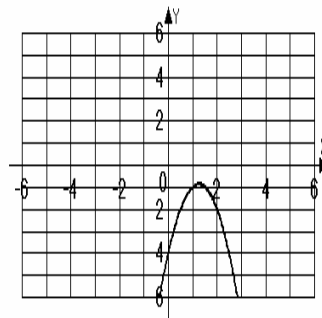
b.



c.



d.



For problems 16 – 17, a ball is thrown upward with a speed of 48 feet per second from a height of 64 feet. The formula $y = -16x^2 + 48x + 64$ models the ball's height above the ground, y , in feet, x seconds after it was thrown.

16. At what time does the ball strike the ground?

a. 3 sec

b. -1 sec

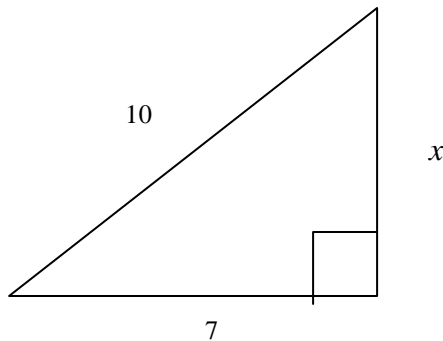
c. 1.5 sec

d. 4 sec

Name _____

Date _____

17. What is the maximum height of the ball above the ground?
a. 100 feet b. 1.5 feet c. 64 feet d. 4 feet
18. Is the relation $\{(5, 3)(5, 2)(5, 1)\}$ a function? Give the domain and range for the relation.
a. Yes
Domain $\{3, 2, 1\}$
Range: $\{5\}$
b. No
Domain: $\{3, 2, 1\}$
Range: $\{5\}$
c. No
Domain $\{5\}$
Range: $\{3, 2, 1\}$
d. Yes
Domain: $\{5\}$
Range: $\{3, 2, 1\}$
19. If $f(x) = -3x^2 - 4x + 5$, find $f(-2)$.
a. 1 b. -15 c. 25 d. 9
20. Find the missing length in the right triangle shown. Express the answer in simplified radical form.



- a. 3 b. $\sqrt{51}$ c. 9 d. $\sqrt{149}$