

Chapter 9
Form F

For problems 1 – 2, simplify each number.

1. $\sqrt{-50}$
a. $25i$ b. $5\sqrt{2}i$ c. $-5i\sqrt{2}$ d. $-5\sqrt{2}$
2. $\sqrt[3]{-64}$
a. $8i$ b. -4 c. $\pm 8i$ d. -8
3. Solve by the square root property: $(2x - 6)^2 = -36$.
a. $\{-3 \pm 3i\}$ b. $\{0\}$ c. $\{3 \pm 6i\}$ d. $\{3 \pm 3i\}$
4. Solve by completing the square: $2x^2 + 12x - 6 = 0$.
a. $\{3, -1\}$ b. $\{3 \pm \sqrt{12}\}$ c. $\{-3 \pm 2\sqrt{3}\}$ d. $\{-3, 1\}$
5. Solve by the quadratic formula: $3x^2 - x - 2 = 0$.
a. $\left\{\frac{-1 \pm \sqrt{23}i}{6}\right\}$ b. **Error! Objects cannot be created from editing field codes.**
c. $\left\{-1, \frac{2}{3}\right\}$ d. $\left\{-\frac{2}{3}, 1\right\}$

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

6. $y(y + 6) + 4 = 0$
a. $\{-3 \pm \sqrt{5}\}$ b. $\{\pm 3\sqrt{5}\}$ c. $\{3 \pm \sqrt{5}\}$ d. $\left\{\pm \sqrt{\frac{5}{3}}\right\}$
7. $(2x - 1)(x - 4) = 39$
a. $\left\{-\frac{5}{2}, 7\right\}$ b. $\left\{-7, \frac{5}{2}\right\}$ c. $\{20, 43\}$ d. $\{19, 35\}$
8. $x^2 - 7x = 18$
a. $\{-2, 9\}$ b. $\{18, 25\}$ c. $\{11, 18\}$ d. $\{-9, 2\}$
9. $2x^2 + 2x + 7 = 0$
a. $\left\{\frac{2 \pm 2\sqrt{13}}{8}\right\}$ b. $\{2 \pm 2\sqrt{13}\}$ c. $\{-1 \pm \sqrt{15}\}$ d. $\left\{\frac{-1 \pm \sqrt{13}i}{2}\right\}$
10. $x^2 - 6x + 9 = 18$
a. $\{6\sqrt{2}\}$ b. $\{3 \pm 3\sqrt{2}\}$ c. $\{-3 \pm 3\sqrt{2}\}$ d. $\{3 \pm 9\sqrt{2}\}$

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11. $5x^2 + 19x = 2x + 12$

- a. $\{-4 \pm \sqrt{5}\}$ b. $\left\{4, \frac{3}{5}\right\}$ c. $\left\{-4, \frac{3}{5}\right\}$ d. $\{1 \pm \sqrt{2}i\}$

12. The vertex of $y = 2x^2 - x + 4$ is:

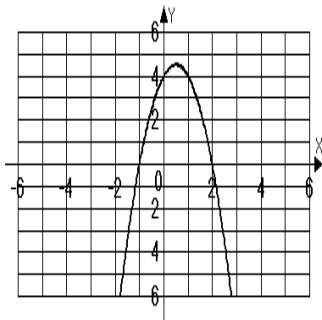
- a. $(0, 4)$ b. $\left(\frac{1}{4}, \frac{31}{8}\right)$ c. $\left(-\frac{1}{4}, \frac{35}{8}\right)$ d. $\left(\frac{1}{2}, 4\right)$

13. The x -intercepts of $y = x^2 - 3x$ are:

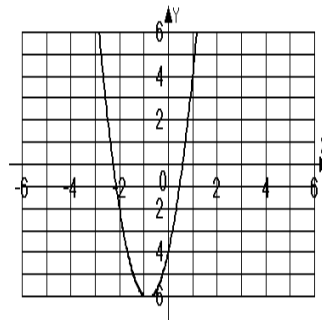
- a. 0 b. -3 and 0 c. 0 and 3 d. 3

14. The graph of $y = -2x^2 + 2x + 4$ is:

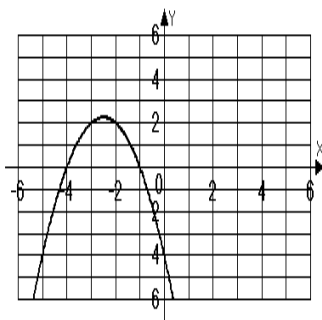
a.



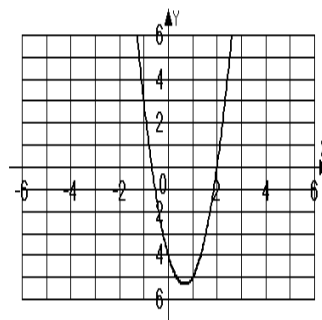
b.



c.

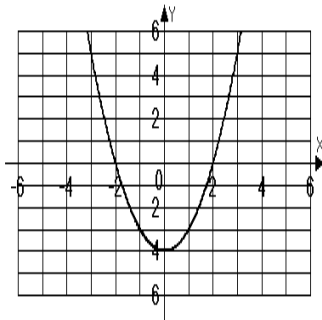


d.

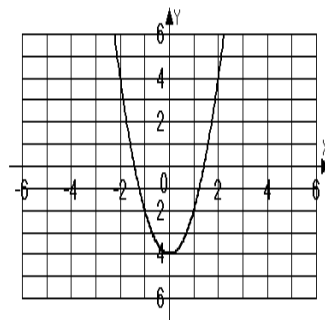


15. The graph of $y = 2x^2 - 4$ is:

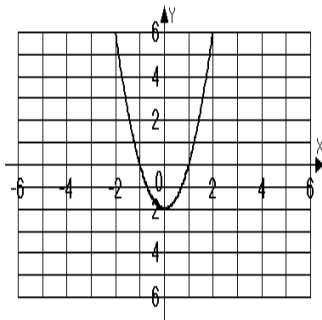
a.



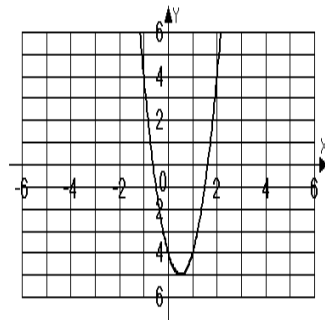
b.



c.



d.



For problems 16 – 17, a company has determined that the cost of glass production, c , in dollars, is related to the amount of glass produced, x , measured in square feet. This model is:

$$C(x) = 700 + 1.2x - 0.02x^2$$

16. What is the maximum cost of glass production?

- a. \$30 b. \$60 c. \$700 d. \$718

17. What is the maximum cost of glass production per square foot of glass? Round your answer to the nearest dollar.

- a. \$24 b. \$12 c. \$30 d. \$60

18. Is the relation $\{(4, -2)(7, -2)(-2, -2)\}$ a function? Give the domain and range for the relation.

- | | |
|-----------------------|------------------------|
| a. No | b. No |
| Domain $\{4, 7, -3\}$ | Domain: $\{-2\}$ |
| Range: $\{-2\}$ | Range: $\{4, 7, -3\}$ |
| c. Yes | d. Yes |
| Domain $\{-2\}$ | Domain: $\{4, 7, -2\}$ |
| Range: $\{4, 7, -2\}$ | Range: $\{-2\}$ |

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19. If $f(x) = -x^2 + x - 4$, find $f(-2)$.

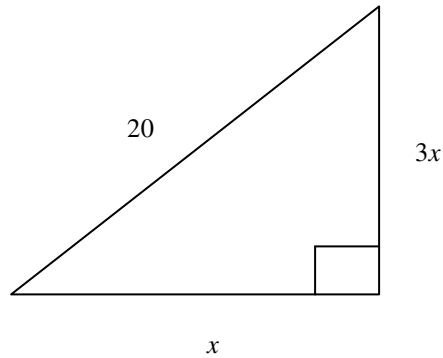
a. -2

b. 2

c. -10

d. 6

20. Using the information shown in the figure, find the value of x . Express the answer in simplified radical form, if it is irrational.



a. 5

b. $2\sqrt{10}$

c. 10

d. $4\sqrt{10}$