Name _____ Date _____

Chapter 10
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. $\left\{\frac{1 \pm \sqrt{23}i}{6}\right\}$ 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. $\{3 \pm 9\sqrt{2}\}$

Name _____ Date _____

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:

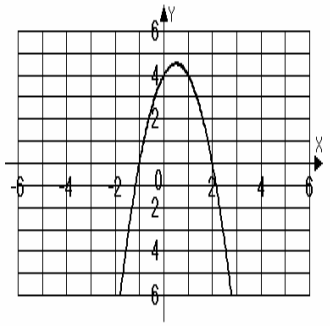
a. (0, 4) b. $\left(\frac{1}{4}, \frac{31}{8}\right)$ c. $\left(-\frac{1}{4}, \frac{35}{8}\right)$ d. $\left(\frac{1}{2}, 4\right)$

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

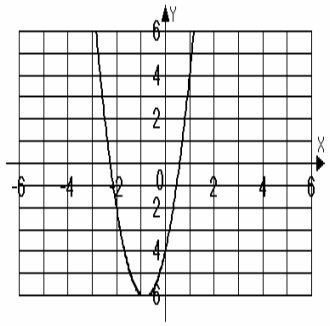
a. 0 b. –3 and 0 c. 0 and 3 d. 3

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

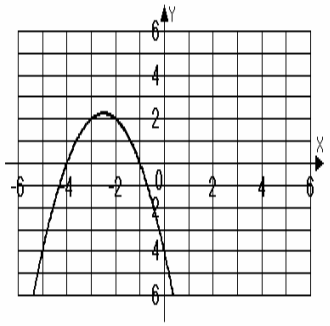
a.



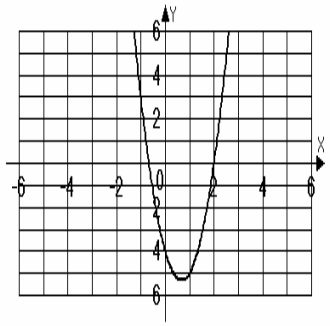
b.



c.

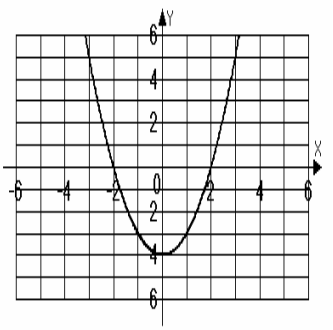


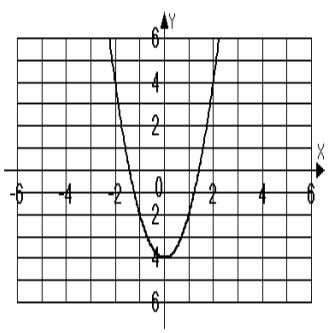
d.

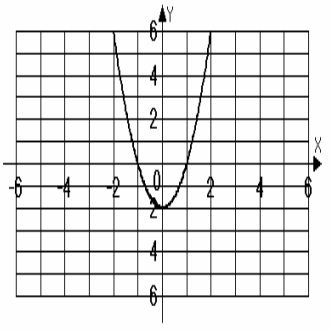


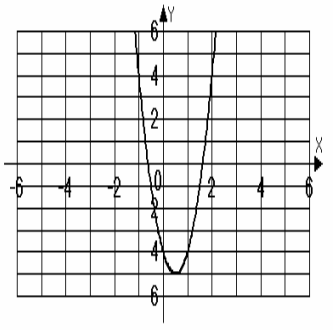
Name _____ Date _____

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
Domain {4, 7, –3}
Range: {–2}

b. No
Domain: {–2}
Range: {4, 7, –3}

c. Yes
Domain {–2}
Range: {4, 7, –2}

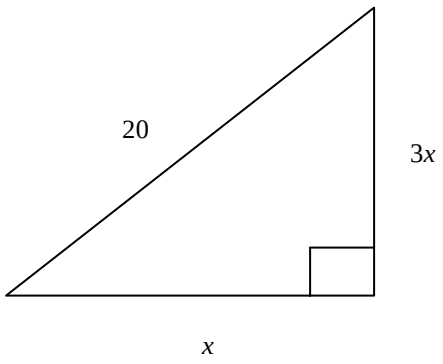
d. Yes
Domain: {4, 7, –2}
Range: {–2}

Name _____ Date _____

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. $4\sqrt{10}$