

**Chapter 9**  
**Form A**

For problems 1 – 2, express each number in terms of  $i$ .

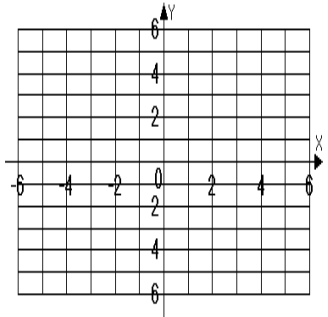
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|----|---|----|-------|
| 1. | $\sqrt{-81}$  | 1. | _____ |
| 2. | $\sqrt{-32}$  | 2. | _____ |
| 3. | Solve by the square root property: $(x + 4)^2 = 36$ . | 3. | _____ |
| 4. | Solve by completing the square: $x^2 + 6x - 3 = 0$ .  | 4. | _____ |
| 5. | Solve by the quadratic formula: $2x^2 - 5x + 6 = 0$ . | 5. | _____ |

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

- |     |                       |     |       |
|-----|-----------------------|-----|-------|
| 6.  | $x^2 + 6x + 4 = 0$    | 6.  | _____ |
| 7.  | $x^2 + 49 = 0$        | 7.  | _____ |
| 8.  | $(2x - 1)(x - 3) = 7$ | 8.  | _____ |
| 9.  | $(5x - 1)^2 = 24$     | 9.  | _____ |
| 10. | $3x^2 + 2x = -4$      | 10. | _____ |
| 11. | $2x^2 - 6x = 5$       | 11. | _____ |

For problems 12 – 13, use the equation  $y = x^2 + 6x + 8$ .

- |     |  |     |                                   |
|-----|--|-----|-----------------------------------|
| 12. | Find the $x$ -intercepts and $y$ -intercept. If the $x$ -intercepts are irrational numbers, round your answers to the nearest tenth. | 12. | $x$ -int _____<br>$y$ -int. _____ |
| 13. | Find the vertex, and graph the parabola. Label the $x$ -intercepts, $y$ -intercept, and the vertex.                                  | 13. | vertex _____                      |



Name \_\_\_\_\_

Date \_\_\_\_\_

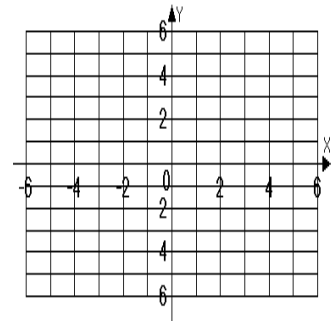
For problems 14 – 15, use the equation  $y = -3x^2 + 6x + 2$ .

14. Find the  $x$ -intercepts and  $y$ -intercept. If the  $x$ -intercepts are irrational numbers, round your answers to the nearest tenth.

14.  $x$ -int. \_\_\_\_\_  
 $y$ -int. \_\_\_\_\_

15. Find the vertex and graph the parabola. Label the  $x$ -intercepts,  $y$ -intercept, and vertex.

15. vertex \_\_\_\_\_



16. A ball is thrown into the air. The formula  $y = -12x^2 + 48x + 8$  models the ball's height above the ground,  $y$ , in feet,  $x$  seconds after it was thrown. When does the ball reach its maximum height? What is that height?

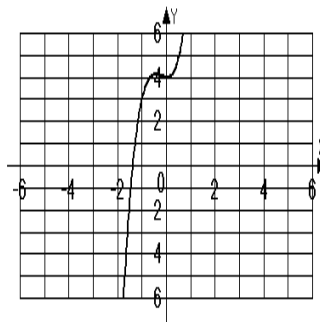
16. \_\_\_\_\_

17. Is the relation  $\{(1, 2)(5, 6)(3, 7)\}$  a function? Give the domain and range for the relation.

17. Function? \_\_\_\_\_  
Domain \_\_\_\_\_  
Range \_\_\_\_\_

18. Is the graph shown in the figure a function? Explain why or why not.

18. Function? \_\_\_\_\_  
Explain \_\_\_\_\_



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

19. \_\_\_\_\_

20. The function  $P(s) = 1.56s^2 + 4.2s + 10.5$  models the profit,  $P$ , in dollars that a gift store achieves for the number of shoppers,  $s$ , who enter the store. Find and interpret  $P(10)$ .

20. \_\_\_\_\_