

**P Chapter Test**

Directions: Show all work where appropriate. A graphing calculator may be necessary to answer some questions.

1. Name the algebraic property or properties illustrated by the equation. **1.** \_\_\_\_\_

$$2x + 3y = 3y + 2x$$

2. Complete the table of solutions for the equation  $y = -3x + 2$ .

**2.**

$x$	$y$
-2	
3	
	-4
	5

3. Last week a theater purchased an air conditioner for \$24,000. The air conditioner's value will depreciate \$4,000 a year for each of the next 6 years. The equation  $y = 24,000 - 4,000x$ ,  $0 \leq x \leq 6$  models the air conditioner's value, where  $y$  is the value of the air conditioner and  $x$  is the number of years after purchase. In how many years will the value of the air conditioner be \$8,000?

**3.** \_\_\_\_\_

4. Write the complex number  $\frac{6 - 5i}{4 + 2i}$  in standard form.

**4.** \_\_\_\_\_

5. For the function  $f(x) = x^2 + 5x + 6$ , choose the viewing window that shows two intersections with the  $x$ -axis and all the points of the graph in between.

**5.** \_\_\_\_\_

- A.  $[-10, 10]$  by  $[-10, 10]$   
 B.  $[-2, 7]$  by  $[-20, 20]$   
 C.  $[-5, 5]$  by  $[-5, 5]$   
 D.  $[-7, 2]$  by  $[0, 20]$   
 E.  $[-20, 20]$  by  $[0, 10]$

6. Find the equation of a line that contains  $(1, 3)$  and has slope  $-4$ . Write the equation in point-slope form.

**6.** \_\_\_\_\_

7. Find the equation of a line that has  $x$ -intercept 3 and  $y$ -intercept  $-5$ . Write the equation in slope-intercept form.

**7.** \_\_\_\_\_

8. In standard form, write the equation of a circle with center  $(-3, 4)$  and radius 7.

**8.** \_\_\_\_\_

**P Chapter Test** *(continued)*

NAME \_\_\_\_\_

9. Solve graphically:

$|3 + 5x| = 7$

9. \_\_\_\_\_

10. Solve graphically:

$-3x^3 - 2x^2 + 4x - 1 = 0$

10. \_\_\_\_\_

11. Write the equation of a line through the point  $(-1, 2)$  and perpendicular to the line with equation  $2x - 3y - 5 = 0$ . Write the equation in the general form.

A.  $2x + 3y + 8 = 0$

B.  $3x + 2y + 2 = 0$

C.  $2x - 3y + 8 = 0$

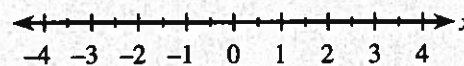
D.  $3x + 2y - 1 = 0$

E.  $2x - 3y - 5 = 0$

11. \_\_\_\_\_

12. Solve the inequality  $|3x - 4| \geq 2$  algebraically. Write the solution in interval notation and draw its number line graph.

12. \_\_\_\_\_



13. Use the quadratic formula to solve  $4x^2 + 6x + 7 = 0$ .

13. \_\_\_\_\_

14. Solve the inequality  $x^2 + 3x - 4 \leq 0$ . Express your answer in interval notation.

14. \_\_\_\_\_

15. Solve the equation  $x^2 + 4 = 9x$  by completing the square. Show all steps.

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

16. A projectile is launched straight up from the ground with an initial velocity of  $352 \frac{\text{ft}}{\text{sec}}$ . At what time(s) will the projectile be at least 1,536 feet above the ground?

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