

Chapter Five Checkpoint

Name _____

1. Factor completely:

$$6x^2 + 17x + 5$$

2. Factor completely

$$2x^2 - x - 21$$

3. Solve the quadratic equation

$$x(2x + 5) = 0$$

4. Solve the quadratic equation

$$x^2 - 6x + 5 = 0$$

5. Write the complex number in standard form

$$(7 + 2i) - (3 + 3i)$$

6. Write in standard form

$$(5 + 3i)(2 - 4i)$$

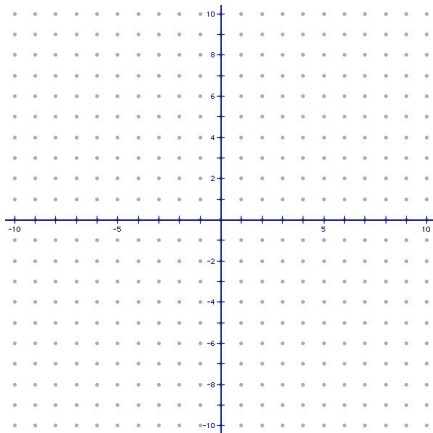
7. Solve the quadratic equation

$$3x^2 + 8x - 3 = 0$$

8. Solve the quadratic equation

$$x^2 = -121$$

9. Draw a Parabola and label ALL of the important parts:



10. Given: $-2x^2 + 1x + 12$

Identify:

Leading coefficient: _____

Quadratic term: _____

Linear term: _____

Constant term: _____

11. Solve the quadratic equation

$$2x^2 - 6x = -4$$

12.

Solve the quadratic equation

$$4(x - 2)^2 = -8$$

13.

Write the complex number in standard form

$$4 - \sqrt{-25}$$

14.

Write in standard form

$$(4 - i)^2$$

15. Use $y = -x^2 + 2x + 3$ to answer the following:

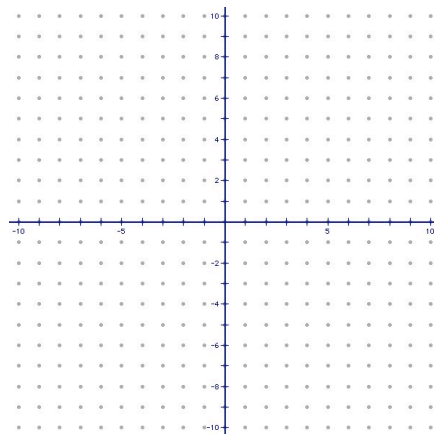
a) What is the vertex? _____

Explain how you know: _____

b) What is the axis of symmetry? _____

c) What is the y -intercept? _____

d) Graph



16. Use $y = (x + 2)^2 - 4$ to answer the following:

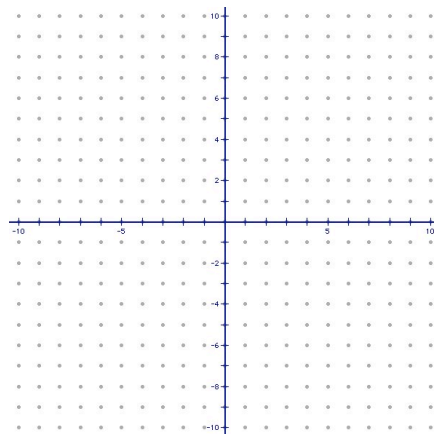
a) What is the vertex? _____

Explain how you know: _____

b) What is the axis of symmetry? _____

c) What is the y -intercept? _____

d) Graph



17.

Solve the quadratic equation

$$4x^2 + 200 = 0$$

19. A model for W.Build.4.U Construction's revenue is $R = -15p^2 + 300p + 12000$, where p is the price in dollars of the company's product. What price will maximize the revenue? What will be the maximum revenue?

Price: _____

Maximum revenue: _____

21. Solve the quadratic equation

$$(x - 2)^2 + 64 = 0$$

23. Factor completely:

$$10x^2 - 3x - 1$$

18. Solve the quadratic equation

$$-4x^2 = -35$$

20. Given: $(3x + 2)^2$

Identify:

Leading coefficient: _____

Quadratic term: _____

Linear term: _____

Constant term: _____

22. Solve the quadratic equation

$$x^2 + 4x - 7 = 0$$

24. Factor completely

$$9x^2 - 121$$

25. Solve the quadratic equation

$$2x^2 + 5 = 11x$$

26. Solve the quadratic equation

$$3x^2 - 4x - 7 = 0$$

Find the vertex of the quadratic function and explain how you found it. Identify the axis of symmetry. Identify the y -intercept. Then graph the quadratic function.

27. $y = 4x^2 + 8x - 45$

Vertex: _____

How did you figure out the vertex?

Axis of symmetry: _____

y -intercept: _____

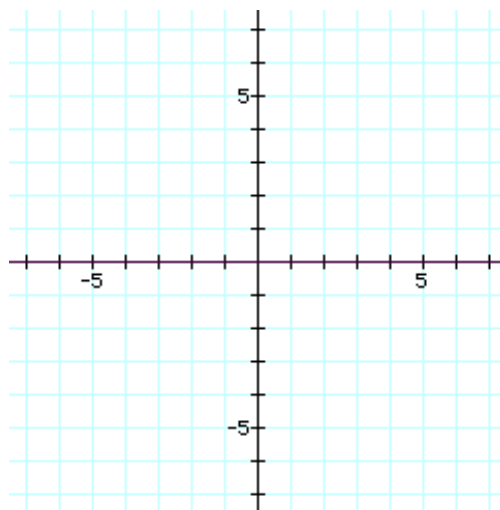
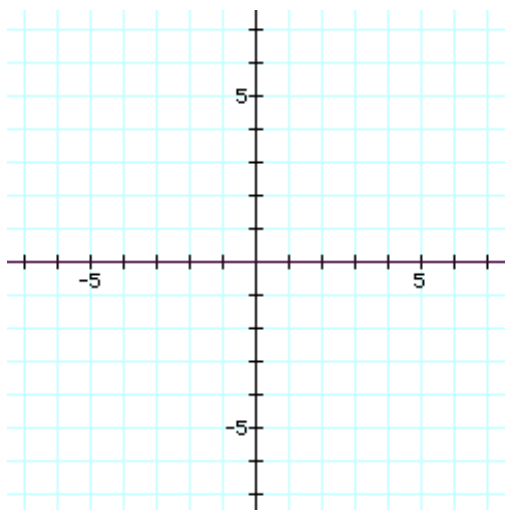
28. $y = (x - 1)^2 - 1$

Vertex: _____

How did you figure out the vertex?

Axis of symmetry: _____

y -intercept: _____



29. Write the complex number in standard form

$$(1 + 5i) + (3 + i)$$

30. Write in standard form



31. Factor completely:

$$2x^2 + 2x - 24$$

32. Factor completely

$$3x^2 + 12x + 12$$

33. The equation for the motion of a projectile fired straight up at an initial velocity of 64 ft/sec is $h = -16t^2 + 64t$, where h is the height in feet and t is the time in seconds. Find the time the projectile needs to reach its highest point. How high will it go? What time will it hit the ground?

Time (max): _____

Height: _____

Time (hit ground): _____

34. Given: $3x^2 - (2x + 1)(x - 5)$

Identify:

Leading coefficient: _____

Quadratic term: _____

Linear term: _____

Constant term: _____