

Name

Key

Period

Sec1H

Practice Test
Pythagorean Theorem

Unit 5

#1-32: Simplify each radical expression.

1. $\sqrt{160}$

$4\sqrt{10}$

2. $\sqrt{144}$

12

3. $\sqrt{45}$

$3\sqrt{5}$

4. $\sqrt{90}$

$3\sqrt{10}$

5. $\sqrt{20}$

$2\sqrt{5}$

6. $6\sqrt{800}$

$120\sqrt{2}$

7. $4\sqrt{50}$

$20\sqrt{2}$

8. $8\sqrt{150}$

$40\sqrt{6}$

9. $10\sqrt{45}$

$30\sqrt{5}$

10. $7\sqrt{196}$

98

11. $\sqrt{729x^2}$

$27x$

12. $\sqrt{324x}$

$18\sqrt{x}$

13. $\sqrt{48x^3}$

$4x\sqrt{3x}$

14. $\sqrt{648x^5}$

$18x^2\sqrt{2x}$

15. $\sqrt{200x^4}$

$10x^2\sqrt{2}$

16. $\sqrt{96x^3}$

$4x\sqrt{6x}$

17. $\sqrt{125x^2}$

$5x\sqrt{5}$

18. $\sqrt{1600x^6}$

$40x^3$

$$19. -2\sqrt{3} + 5\sqrt{3}$$

$$3\sqrt{3}$$

$$20. 3\sqrt{5} - \sqrt{5} + 2\sqrt{5}$$

$$4\sqrt{5}$$

$$21. -2\sqrt{12} + 3\sqrt{27}$$

$$5\sqrt{3}$$

$$22. -2\sqrt{5} + 2\sqrt{5}$$

$$0$$

$$23. 3\sqrt{6} - \sqrt{12} + 2\sqrt{6}$$

$$5\sqrt{6} - 2\sqrt{3}$$

$$24. -2\sqrt{2} + 2\sqrt{2}$$

$$0$$

$$25. \sqrt{15} \cdot \sqrt{5}$$

$$5\sqrt{3}$$

$$26. \sqrt{7} \cdot 3\sqrt{2}$$

$$3\sqrt{14}$$

$$27. -2\sqrt{6} \cdot 4\sqrt{2}$$

$$-16\sqrt{3}$$

$$28. \sqrt{2} \cdot \sqrt{8}$$

$$4$$

$$29. (2\sqrt{5})^3$$

$$40\sqrt{5}$$

$$30. (3\sqrt{7})^2$$

$$63$$

$$31. (5\sqrt{3})^2$$

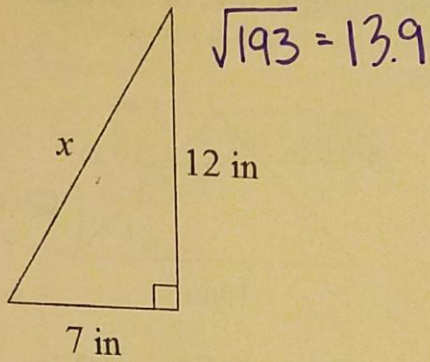
$$75$$

$$32. (7\sqrt{2})^3$$

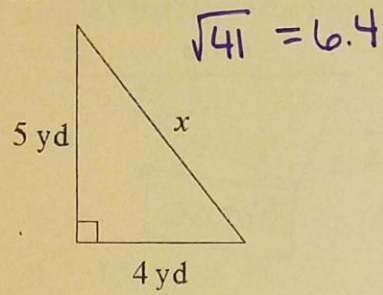
$$686\sqrt{2}$$

#33-38: Find the length of each missing side.

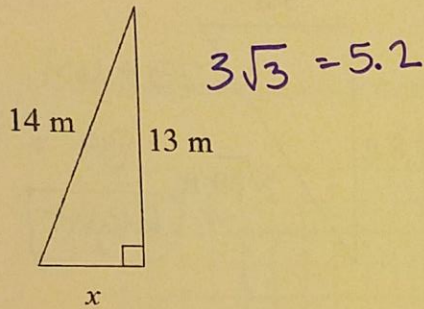
33.



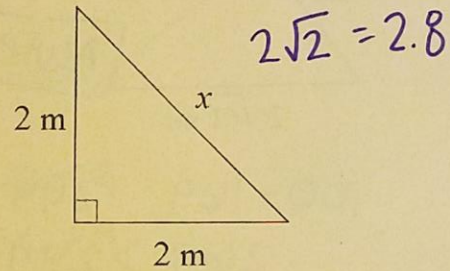
34.



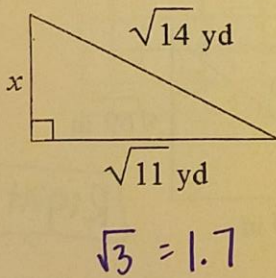
35.



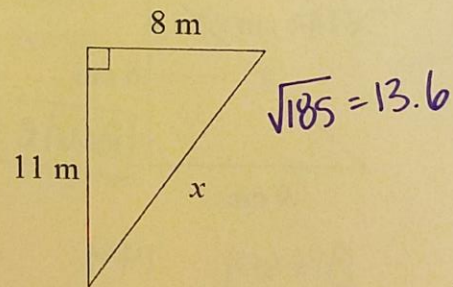
36.



37.

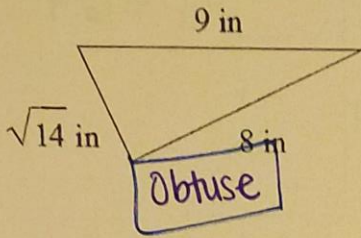


38.

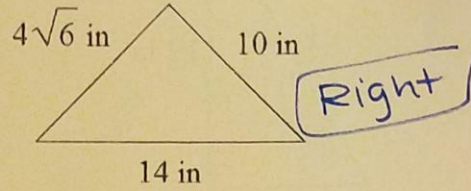


#39-44: State whether each triangle is right, acute, or obtuse.

39.

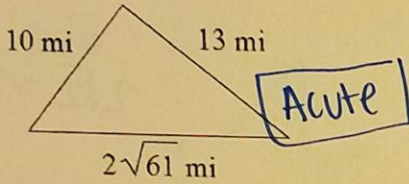


40.



$$96 + 100 = 196$$

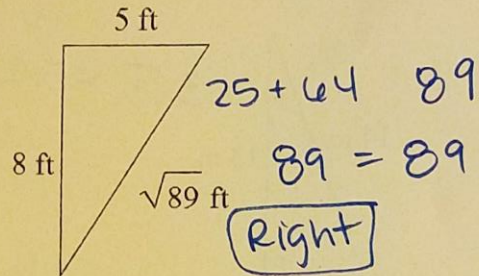
41.



$$100 + 169 = 244$$

$$269 > 244$$

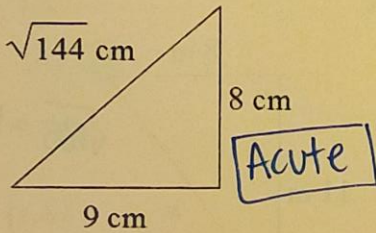
42.



$$25 + 64 = 89$$

$$89 = 89$$

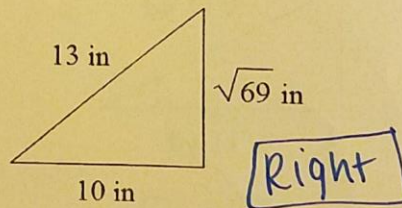
43.



$$81 + 64 = 144$$

$$145 < 144$$

44.



$$100 + 69 = 169$$

#45 - 50: Find the distance between each pair of points.
(Write each answer in both EXACT and APPROXIMATE form).

45. $(-5, 6)$ and $(-3, -6)$

$$\sqrt{(-5 - (-3))^2 + (6 - (-6))^2}$$

$$2\sqrt{37}$$

$$12.2$$

46. $(4, 4)$ and $(-7, -6)$

$$\sqrt{221}$$

$$14.9$$

47. $(-5, -4)$ and $(1, -1)$

$$3\sqrt{5}$$

$$6.7$$

48. $(-2, 5)$ and $(3, -6)$

$$\sqrt{146}$$

$$12.1$$

49. $(-7, 6)$ and $(-7, -7)$

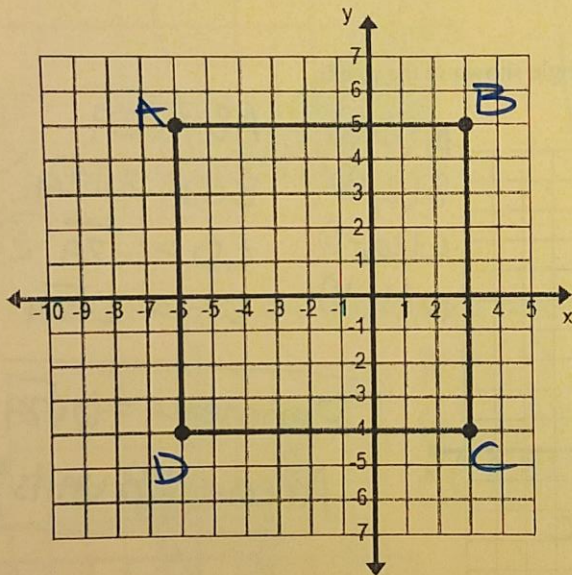
$$13$$

50. $(-1, 8)$ and $(5, -5)$

$$\sqrt{205}$$

$$14.3$$

51. Find the perimeter and area of the rectangle shown in the diagram.



$$AB = 9$$

$$BC = 9$$

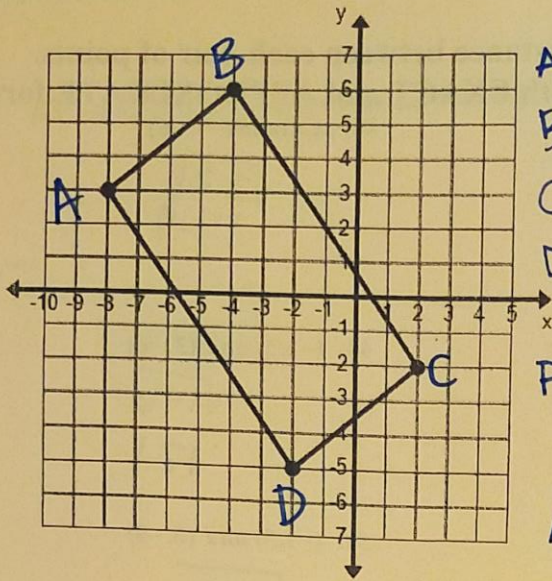
$$CD = 9$$

$$DA = 9$$

$$\text{Perimeter} = 36 \text{ units}$$

$$\text{Area} = 81 \text{ units}^2$$

52. Find the perimeter and area of the rectangle shown in the diagram.

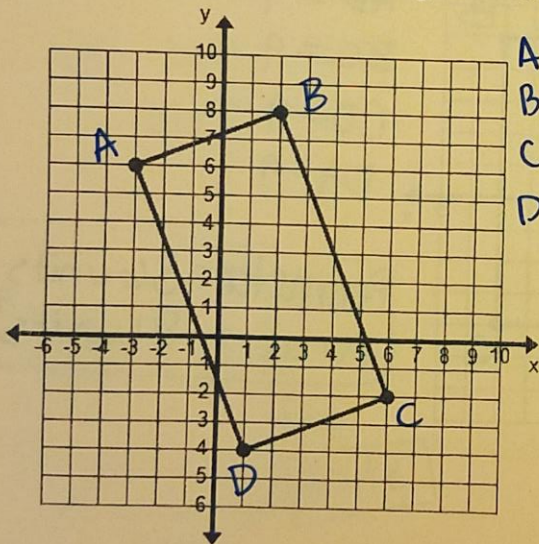


$$\begin{aligned} A(-8, 3) & \quad AB = \underline{5} \\ B(-4, 6) & \quad BC = \underline{10} \\ C(2, -2) & \quad CD = \underline{5} \\ D(-2, -5) & \quad DA = \underline{10} \end{aligned}$$

$$\text{Perimeter} = 5 + 10 + 5 + 10 = \underline{30 \text{ units}}$$

$$\text{Area} = 10 \cdot 5 = \underline{50 \text{ units}^2}$$

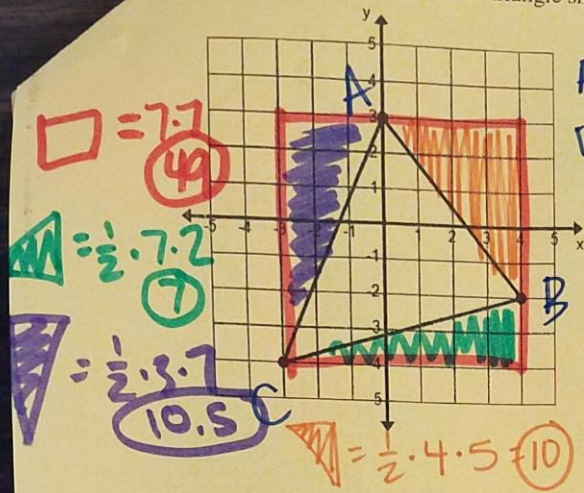
53. Find the perimeter and area of the rectangle shown in the graph.



$$\begin{aligned} A(-3, 6) & \quad AB = \sqrt{29} \\ B(2, 8) & \quad BC = 2\sqrt{29} \\ C(6, -2) & \quad CD = \sqrt{29} \\ D(1, -4) & \quad DA = 2\sqrt{29} \end{aligned}$$

$$\begin{aligned} \text{Perimeter} &= 6\sqrt{29} = 32.3 \\ \text{Area} &= 58 \text{ units}^2 \end{aligned}$$

4. Find the perimeter and area of the triangle shown in the graph.



$$A(0,3)$$

$$B(4,-2)$$

$$C(-3,-4)$$

$$AB = \sqrt{41}$$

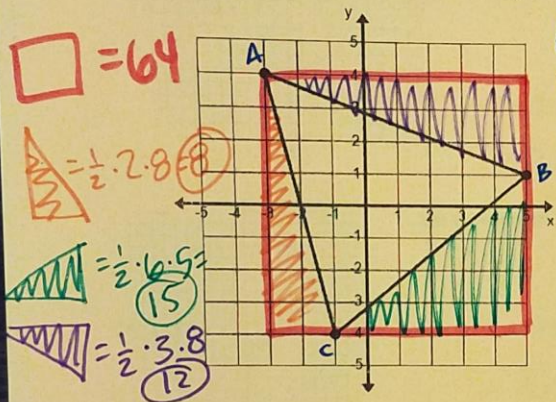
$$BC = \sqrt{53}$$

$$CA = \sqrt{58}$$

$$\text{Perimeter} = 21.3 \text{ units}$$

$$\text{Area} = 49 - 7 - 10.5 - 10.5 = 21.5 \text{ units}^2$$

55. Find the perimeter and area of the triangle in the graph.



$$A(-3,4)$$

$$B(5,1)$$

$$C(-1,-4)$$

$$AB = \sqrt{73}$$

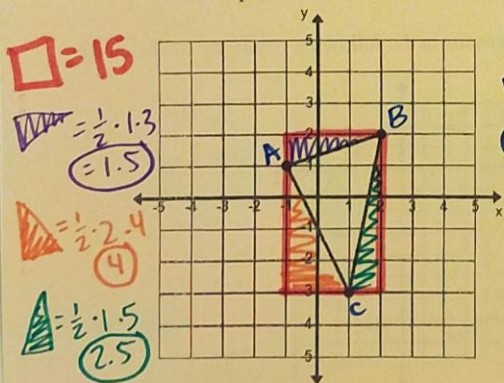
$$BC = \sqrt{61}$$

$$CA = 2\sqrt{17}$$

$$\text{Perimeter} = 24.6 \text{ units}$$

$$\text{Area} = 64 - 8 - 15 - 12 = 29 \text{ units}^2$$

56. Find the perimeter and area of the triangle in the graph.



$$A(-1,1)$$

$$B(2,2)$$

$$C(1,-3)$$

$$AB = \sqrt{10}$$

$$BC = \sqrt{26}$$

$$CA = 2\sqrt{5}$$

$$\text{Perimeter} = 12.7 \text{ units}$$

$$\text{Area} = 7 \text{ units}^2$$

57. Given a circle with radius 3 and centered at (2, 4), determine if the following points are on the circle.

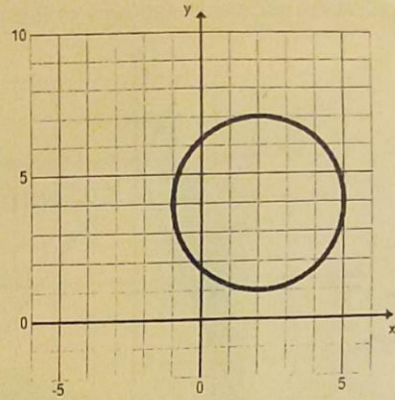
A. (0, 6)

$$\sqrt{(0-2)^2 + (6-4)^2} = 2\sqrt{2} = 2.8$$

NO

B. (3.5, 1.5)

NO



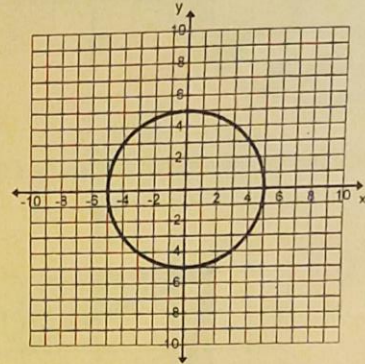
58. Given a circle centered at the origin with a radius of 5, determine if the following points are on the circle.

A. $(\sqrt{3}, \sqrt{22})$

Yes

B. (-3, -4)

Yes



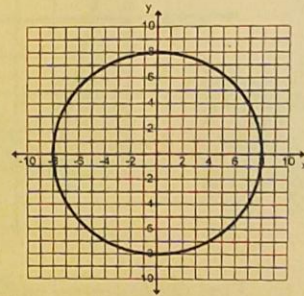
59. Given a circle centered at the origin with radius 8, determine if the following points are on the circle.

A. $(5\sqrt{2}, \sqrt{14})$

Yes

B. (-4, 7)

NO



60. Given a circle centered at (-1, -3) with a radius of 5, determine if the following points are on the circle.

A. (-4, -7)

Yes

B. (1.5, -7.5)

NO

