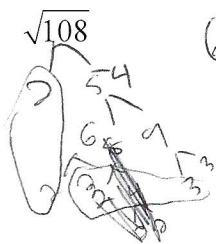


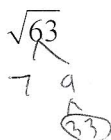
9.1 Simplifying Radicals and Quadratic Equations

1.



$$6\sqrt{3}$$

2.



$$3\sqrt{7}$$

$$3. (4\sqrt{5})^2$$

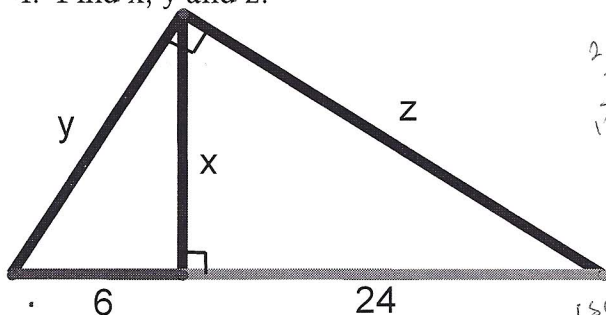
$$2 \cdot \frac{16}{5}$$

$$16(5)$$

$$80$$

9.3 Altitude on Hypotenuse

4. Find x, y and z.



$$x^2 = 144$$

$$x = 12$$

$$z^2 = 24(30)$$

$$z^2 = 720$$

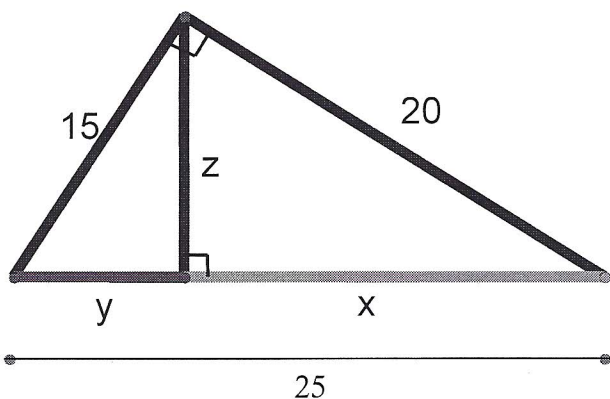
$$z = 12\sqrt{5}$$

$$y^2 = 6(30)$$

$$y^2 = 180$$

$$y = 6\sqrt{5}$$

5. Find x, y and z.



$$z^2 = 9 \cdot 16$$



$$15^2 = 425$$

$$y = \frac{205}{25}$$

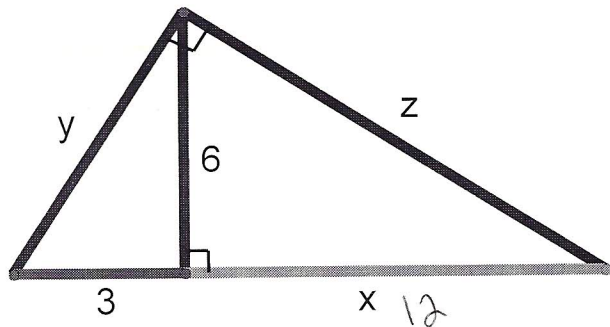
$$y = 9$$

$$20^2 = x \cdot 25$$

$$x = \frac{400}{25}$$

$$x = 16$$

6. Find x, y, and z.



$$6^2 = 3x$$

$$3x = 36$$

$$x = 12$$

$$y^2 = 3(15)$$

$$y^2 = 45$$

$$y = 3\sqrt{5}$$

$$\frac{15}{3} = 5$$

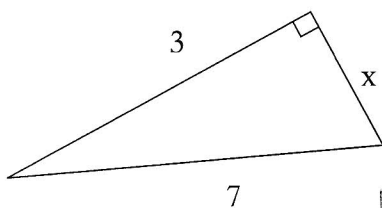
$$z^2 = 12(15)$$

$$z = 6\sqrt{5}$$

9.4 Pythagorean Theorem

Solve for x.

7.



$$3^2 + x^2 = 7^2$$

$$9 + x^2 = 49$$

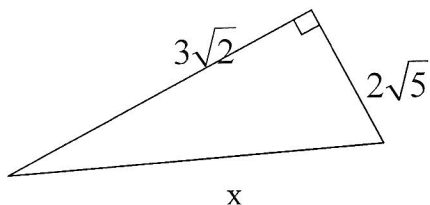
$$\sqrt{x^2} = \sqrt{40}$$

$$x = 2\sqrt{10}$$

40
5
2
2
5
20

$$x = 2\sqrt{10}$$

8.



$$x^2 = 9(2) + 4(5)$$

$$x^2 = 18 + 20$$

$$\sqrt{x^2} = \sqrt{38}$$

$$x = \sqrt{38}$$

$$x = \sqrt{38}$$

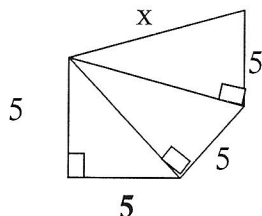
9. Find the diagonal of a rectangle that has dimensions 7 by 24. (Draw a picture.)

$$7^2 + 24^2 = x^2$$

$$\sqrt{x^2} = \sqrt{625}$$

$$x = 25$$

10. Find x.



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

$$\sqrt{x^2} = \sqrt{50}$$

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

$$x^2 = (5\sqrt{2})^2 + 5^2$$

$$x^2 = 75(2) + 25$$

$$x^2 = 75$$

$$x = 5\sqrt{3}$$

$$x^2 = (5\sqrt{3})^2 + 5^2$$

$$x^2 = 25(3) + 25$$

$$\sqrt{x^2} = \sqrt{100}$$

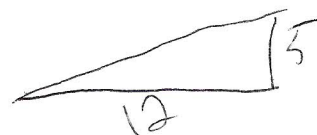
$$x = 10$$

11. Tommy walked 12 blocks east from school. He then turned north and walked 5 blocks. He decides to go back to school and take the straight path back. How many blocks is the straight path back? (Draw a picture)

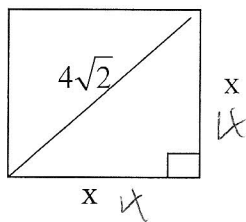
$$x^2 = 12^2 + 5^2$$

$$x^2 = 169$$

$$x = 13 \text{ blocks}$$



12. Find the perimeter of the square.



$$x^2 + x^2 = (4\sqrt{2})^2$$

$$2x^2 = 32$$

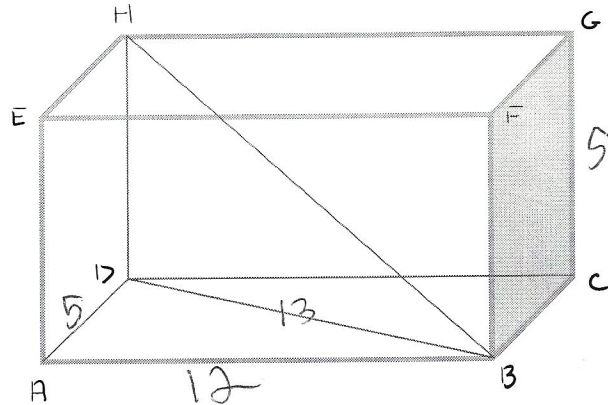
$$\sqrt{x^2} = \sqrt{16}$$

$$x = 4$$



9.8 The Pythagorean Theorem and Space Figures

13. The dimensions of a rectangular solid are AD = 5, GC = 5, and AB = 12. Find the diagonal HB



$$x^2 = 5^2 + 12^2$$

$$\sqrt{x^2} = \sqrt{169}$$

$$x = 13$$

$$x^2 = 5^2 + 13^2$$

$$x^2 = 194$$

$$x = 194$$

$$5^2 + 12^2 = x^2$$

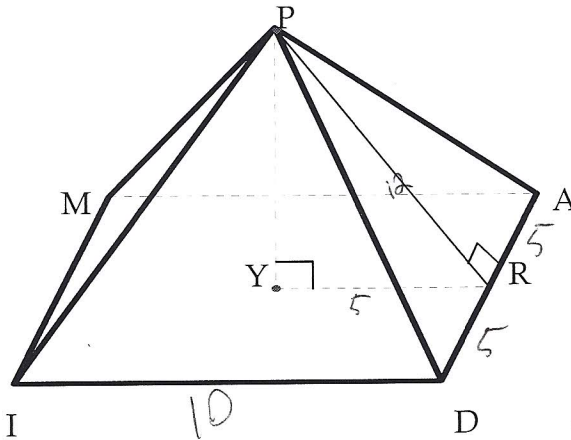
$$x^2 = 169$$

$$DB = x = 13$$

14. The regular square pyramid shown, with altitude PY and slant height PR, if ID = 10, and

PR = 12 find:

- DA _____
- YR _____
- RD 5
- PD 13
- PY _____



$$10^2 + 5^2 = x^2$$

$$x^2 = 125$$

$$x = 13$$

$$x^2 + 5^2 = 12^2$$

$$x^2 = 119$$

$$x = \sqrt{119}$$

$$x = 13.5$$

~~$$x^2 = 12^2 + 5^2$$

$$x^2 = 169$$

$$x = 13$$~~