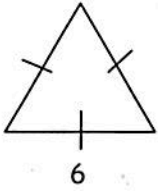


Area of Parallelograms, Triangles, Rhombi, Kites and Trapezoids

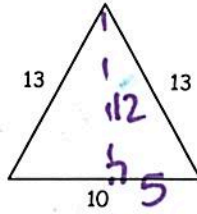
Key

1. Find area.



$$\frac{6^2 \sqrt{3}}{4} = \frac{36\sqrt{3}}{4} = 9\sqrt{3} \quad (15.588)$$

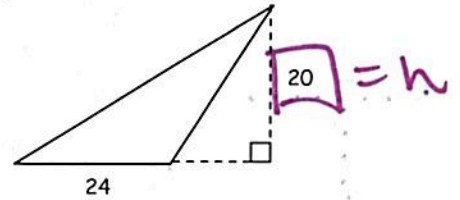
2. Find area.



$$A = \frac{1}{2}(10)(12)$$

$$A = 60$$

3.



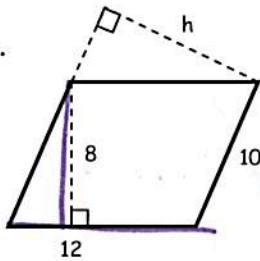
$$A = \frac{1}{2}(20)(24)$$

$$A = 240$$

4. Find the area. Use the answer to find h.

$$A = 8(12)$$

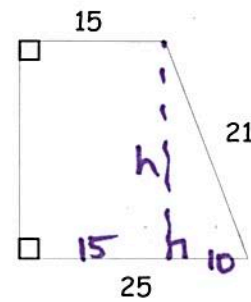
$$A = 96$$



$$96 = h \cdot 10$$

$$h = 9.6$$

5. Find the area of the trapezoid.



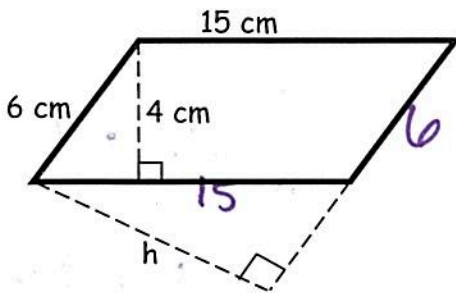
$$h^2 + 10^2 = 21^2$$

$$h = 18.466$$

$$A = \frac{1}{2}(18.466)(15 + 25)$$

$$A = 369.32$$

6. Find the area, height, and perimeter.



$$A = 15 \cdot 4$$

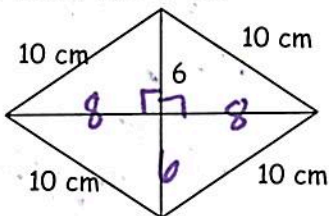
$$A = 60$$

$$P = 42 \text{ cm}$$

$$6 \cdot h = 60$$

$$h = 10$$

7. Find the area.



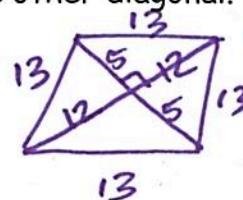
$$d_1 = 12$$

$$d_2 = 16$$

$$A = \frac{1}{2}(12)(16)$$

$$A = 96 \text{ cm}^2$$

8. The perimeter of a rhombus is 52 ft. One diagonal is 10 ft. Find the length of the other diagonal.

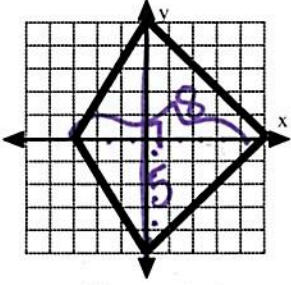


$$d_2 = 24$$

$$A = \frac{1}{2}(10)(24)$$

$$A = 120$$

9. Find the area of the kite.



$$d_1 = 8$$

$$d_2 = 10$$

$$A = \frac{1}{2}(8)(10)$$

$$A = 40$$

10. The area of a kite is 100 sq cm. Find the length of the diagonals if one is twice as long as the other.

$$x, 2x$$

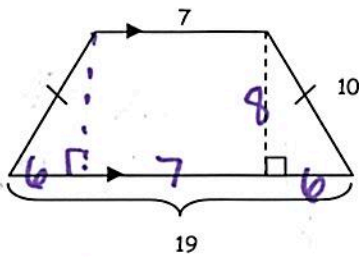
$$A = \frac{1}{2}(x)(2x)$$

$$100 = \frac{1}{2}(2x^2)$$

$$x = 10$$

$$10, 20$$

11. Find the area.



$$A = \frac{1}{2}(7+19)(8)$$

$$A = 104$$

12. A trapezoid has an area of 75 sq inches. Its two bases are 8 and 17 inches. Find the height of the trapezoid.

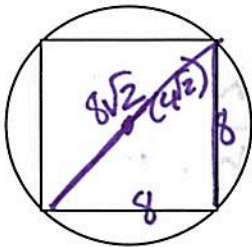
$$75 = \frac{1}{2}(8+17)(h)$$

$$75 = \frac{1}{2}(25)(h)$$

$$3 = \frac{1}{2}(h)$$

$$h = 6 \text{ in}$$

13. Find the shaded area (area inside circle but outside the square). The side of the square is 8 inches.



$$A_{\square} = 64$$

$$A_{\circ} = \pi(4\sqrt{2})^2$$

$$= 32\pi$$

$$32\pi - 64$$

$$36.531 \text{ in}^2$$

14. The town's new playground design is shown at the right. The main area is a square with sides of 50 yards. On two sides of the square is a semicircular area. The smaller semicircular area has a diameter half the size of the larger. What is the area of the new playground?

$$A = 2500 + 312.5\pi + 78.125\pi$$

$$3727.185 \text{ yds}$$

