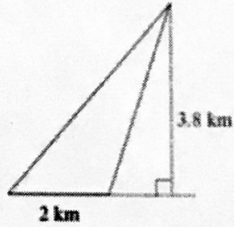


Area of Triangles and Quadrilaterals

Level 1:

1.)



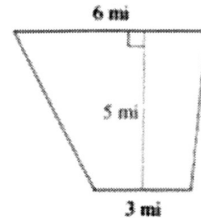
$$\frac{1}{2} \cdot 2 \cdot 3.8 = \boxed{3.8 \text{ km}^2}$$

2.)



$$5.7 \cdot 8 = \boxed{45.6 \text{ m}^2}$$

3.)



$$\left(\frac{6+3}{2}\right) \cdot 5 = \boxed{22.5 \text{ mi}^2}$$

4.) A triangle's area is 40 square centimeters. What is the height of the triangle if the base is 8 cm?
 (Hint: If Area = $\frac{1}{2}(\text{base})(\text{height})$, rewrite the formula using the given area and base values.)

$$40 = \frac{1}{2}(8)(h)$$

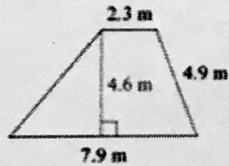
$$40 = 4h$$

$$\boxed{h = 10 \text{ cm}}$$

Checkpoint

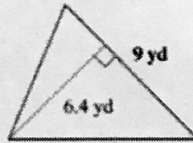
Level 2:

5.)



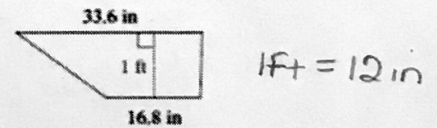
$$\left(\frac{2.3+7.9}{2}\right) \cdot 4.6 = \boxed{23.46 \text{ m}^2}$$

6.)



$$\frac{1}{2}(9)(6.4) = \boxed{28.8 \text{ yd}^2}$$

7.)



$$\left(\frac{33.6+16.8}{2}\right) \cdot 12 = \boxed{302.4 \text{ in}^2}$$

8.) A trapezoid's area is 144 square inches. What is the height of the trapezoid if the two bases of the trapezoid are 16 in. and 24 in.? (Hint: Use the formula for area of a ~~triangle~~ ^{trapezoid} and plug in the given information.)

$$144 = \left(\frac{16+24}{2}\right) \cdot h$$

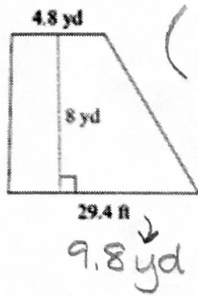
$$144 = 20h$$

$$\boxed{h = 7.2 \text{ in}}$$

Checkpoint

Level 3:

9.)

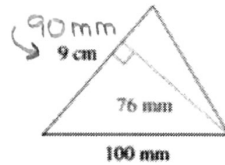


$$\left(\frac{4.8+9.8}{2}\right) \cdot 8 =$$

$$7.3 \cdot 8 =$$

$$\boxed{58.4 \text{ yd}^2}$$

10.)



$$\frac{1}{2} (90)(76) = \boxed{3,420 \text{ mm}^2}$$

- 11.) The floor of Taylor's bathroom is covered with tiles in the shape of triangles. Each triangle has a height of 7 in. and a base of 12 in. If the floor of her bathroom has 40 tiles, what is the area of the bathroom floor?

$$\frac{1}{2} (12)(7) = 42 \text{ in}^2 \text{ per tile}$$

$$\boxed{1680 \text{ in}^2}$$

- 12.) The area of a trapezoid is 156 square centimeters. One base has a length of 11 centimeters and the height of the trapezoid is 13 centimeters. What is the length of the second base?

$$156 = \left(\frac{11+x}{2}\right)(13)$$

$$24 = 11 + x$$

$$\boxed{x = 13 \text{ cm}}$$

$$12 = \frac{11+x}{2}$$

-----Checkpoint-----

Level 4:

- 13.) The area of a rectangular vegetable patch is 24 square meters. It is 4 meters wide. How long is it?

$$4 \cdot L = 24$$

$$\boxed{L = 6 \text{ m.}}$$

- 14.) Rita's living room is 3 meters wide and 6 meters long. She wants to put a border around the top of the room. The cost of the border is \$3.16 per meter. How much will it cost to buy enough of the border to go around the room?

$$3+6+3+6 = 18 \text{ m (perimeter)}$$

$$18 \cdot 3.16 = \boxed{\$56.88}$$

- 15.) Vera's pool table is 3 feet wide and 7 feet long. Vera wants to replace the felt on the pool table. The felt costs \$4.29 per square foot. How much would it cost in total to replace the felt on the pool table?

$$3 \cdot 7 = 21 \text{ ft (area)}$$

$$21 \cdot 4.29 = \boxed{\$90.09}$$

- 16.) A photograph is 6 inches by 9 inches. A frame shop charges \$1.86 per inch for a silver frame. How much would it cost to buy a silver frame for the photograph?

$$6+9+6+9 = 30 \text{ in (perimeter)}$$

$$30 \cdot 1.86 = \boxed{\$55.80}$$