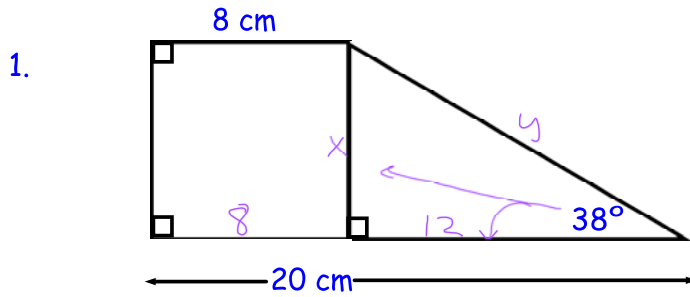


## Examples

Find the area and perimeter of figures using trigonometry.



$$12 \cdot \tan 38^\circ = \frac{x}{12} \cdot 12 \quad y \cdot \cos 38^\circ = \frac{12}{y} \cdot y$$

$$x = 12 \tan 38^\circ \quad y \cos 38^\circ = 12$$

$$x \approx 9.38 \quad y = \frac{12}{\cos 38^\circ}$$

$$y \approx 15.23$$

height of trapezoid  $\rightarrow$

$$A = \frac{1}{2} h (b_1 + b_2)$$

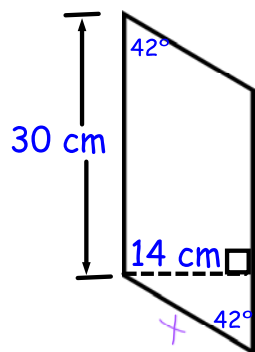
$$A = \frac{1}{2} (9.38)(8 + 20)$$

$$A \approx 131.32 \text{ so } \sim 131 \text{ cm}^2$$

$$P \approx 9.38 + 8 + 15.23 + 20$$

$$P \approx 52.61 \text{ so } \sim 53 \text{ cm}$$

## 2. Parallelogram



$$x \cdot \sin 42^\circ = \frac{14}{x} \cdot x$$

$$x \sin 42^\circ = 14$$

$$x = \frac{14}{\sin 42^\circ} \approx 20.92 \text{ cm}$$

$$A = bh$$

$$= 30(14)$$

$$= 420 \text{ cm}^2$$

$$P = 2(30) + 2(20.92)$$

$$\approx 60 + 41.84$$

$$\approx 101.84$$

$$\text{so } \sim 102 \text{ cm}$$