

## Algebra Practice w/Geometry formulas.....

**Example:** Find the second base of this trapezoid if it has area of  $924\text{m}^2$ .

**Step one:** Write the formula

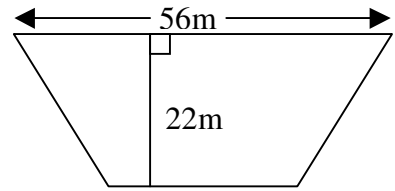
$$A = \frac{(b_1 + b_2)h}{2}$$

**Step two:** Substitute values into the formula.

$$924 = \frac{(56 + b_2)22}{2}$$

**Step three:** Use Algebra to solve.

$$\begin{aligned} 2 \cdot 924 &= \frac{(56 + b_2)22}{\cancel{2}} \cdot \cancel{2} \\ 1848 &= 1232 + 22b_2 \\ 1848 - 1232 &= 1232 + 22b_2 - 1232 \\ \underline{616} &= \underline{22b_2} \\ \underline{22} \quad \underline{22} & \\ 28 &= b_2 \end{aligned}$$



Now you try some. Show all three steps as in the example above.

- 1) Find the second base of a trapezoid if it has one base of 14cm, a height of 8cm and area of  $200\text{cm}^2$ .
- 2) Find the height of a trapezoid if it has bases of 36m and 28m and an area of  $128\text{m}^2$ .
- 3) The area of a parallelogram is  $452.64 \text{ in.}^2$ . If a base has length 24.6 in., what is the length of the altitude drawn to that base?
- 4) A triangle has an area of  $924\text{m}^2$ . What is the length of a base with an altitude drawn to it of 28m?
- 5) The circumference of a circle is  $50\pi$ . What is its radius?
- 6) The area of a circle is  $81\pi$ . What is its radius?
- 7) The length of an arc of  $40^\circ$  of a circle is  $8\pi$ . Find the radius of the circle.
- 8) A regular octagon has an area of  $331.2 \text{ ft}^2$ . The sides of the octagon measure 8.28ft each. Find the length of the apothem.

**Check your answers below.....**

***Answers:***

1) 36cm

2) 4m

3) 18.4 in.

4) 66m

5) 25

6) 9

7) 36

8) 10 ft