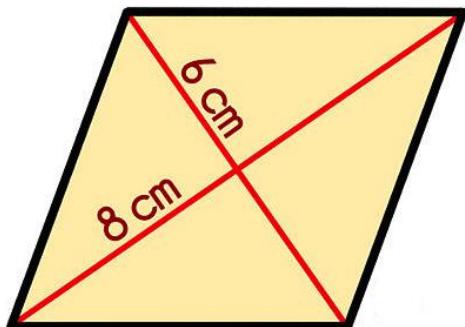


Answer on Question #45217 – Math – Geometry

find the perimeter of a rhombus if the diagonal are 6cm and 8 cm

Solution:



Diagonal 6cm = 3cm + 3cm = legs of right triangle within rhombus.

Diagonal 8cm = 4cm + 4cm = legs of right triangle within rhombus.

We need to find the side of the rhombus using the Pythagorean Theorem, because diagonals of rhombus are perpendicular.

Let s = side of rhombus.

P = perimeter of the rhombus

After that, we use the formula $P = 4 \cdot s$ to find perimeter.

Pythagorean Theorem for the right triangle:

$$3^2 + 4^2 = s^2$$

$$\begin{aligned} 9 + 16 &= s^2 \\ 25 &= s^2 \\ s &= 5 \end{aligned}$$

Now that we know the side of the rhombus, apply $P = 4 \cdot s$.

$$P = 4 \cdot 5\text{cm} = 20\text{cm}$$

Answer: perimeter of a rhombus is 20cm