

**Answer on Question #43888, Math – Algebra:**

The length of a rectangle is twice its width. If the length of its diagonal is  $16\sqrt{5}$  cm, find its area.

**Solution.**

Assume that the width of a rectangle is equal to  $x$  cm. So, the length is equal to  $2x$  cm.

By the Pythagorean theorem:

$$x^2 + (2x)^2 = (16\sqrt{5})^2 \Rightarrow x^2 + 4x^2 = 5 \cdot 16^2 \Rightarrow 5x^2 = 5 \cdot 16^2 \Rightarrow x^2 = 16^2 \Rightarrow x = 16;$$

Now find the area:

$$S = x \cdot 2x = 2x^2 = 2 \cdot 16^2 = 512.$$

Answer.

$$S = 512 \text{ cm}^2.$$