

Geometry Worksheet: Right Triangle (3)

1. ABC is a right triangle and BD is perpendicular to AC. Find the lengths of AD.

Triangles ABD and ABC are similar: right and have angle A equal in size.

$$\frac{AB}{AC} = \frac{AD}{AB}$$

$$\Rightarrow (AB)^2 = AC \cdot AD$$

$$(AB)^2 = 3x^2$$

Pythagora:  $AB^2 = x^2 + 24^2$

$$\Rightarrow x^2 + 24^2 = 3x^2$$

$$2x^2 = 24^2$$

$$x = \frac{24}{\sqrt{2}}$$

