Name_____ Date_____

RED YELLOW GREEN BLUE

Geometry: Practice and Present Mean Proportional Problems

1. ΔABC is a right triangle, ∠C is a right angle, and altitude $\overline{CD} \perp \overline{AB}$. If AD = 3 and CD = 6, find DB.

2. ΔABC is a right triangle, ∠C is a right angle, and altitude $\overline{CD} \perp \overline{AB}$. If AB = 8 and AC = 4, find AD.

3. ΔABC is a right triangle, ∠C is a right angle, and altitude $\overline{CD} \perp \overline{AB}$. If AC = 10 and AD = 5, find AB.

4. In right ΔABC, $\overline{CD}$ is the altitude drawn to hypotenuse $\overline{AB}$. If CD = 6, AD = 3, and DB = 5x - 3, find x.

5. In right ΔABC, $\overline{CD}$ is the altitude drawn to hypotenuse $\overline{AB}$. AC = 12 and AB = 25. If BD is represented by x, write and solve an equation to find x.

6. In right ΔABC, $\overline{CD}$ is the altitude drawn to hypotenuse $\overline{AB}$. If CD = 3 cm, and if DB exceeds AD by 8 cm, find AD and DB.

KEY

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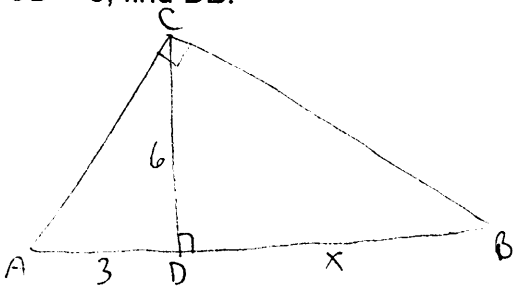
Geometry: Practice and Present Mean Proportional Problems

1. ΔABC is a right triangle, ∠C is a right angle, and altitude $\overline{CD} \perp \overline{AB}$. If AD = 3 and CD = 6, find DB.

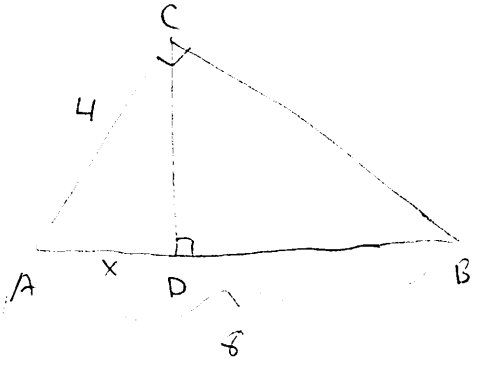


$\frac{3}{6} = \frac{6}{x}$

$3x = 36$

$x = 12$

2. ΔABC is a right triangle, ∠C is a right angle, and altitude $\overline{CD} \perp \overline{AB}$. If AB = 8 and AC = 4, find AD.

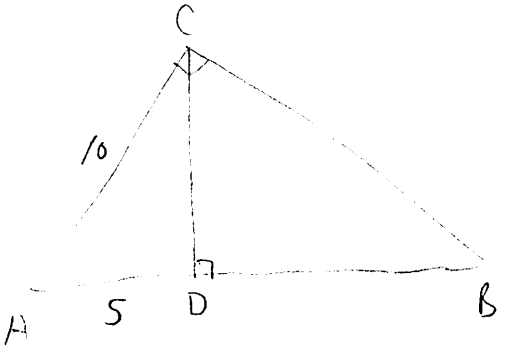


$\frac{4}{8} = \frac{x}{4}$

$8x = 16$

$x = 2$

3. ΔABC is a right triangle, ∠C is a right angle, and altitude $\overline{CD} \perp \overline{AB}$. If AC = 10 and AD = 5, find AB.

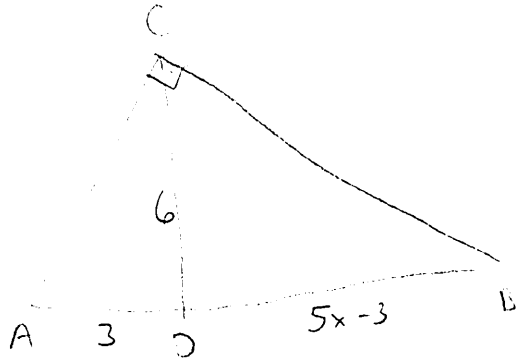


$\frac{5}{10} = \frac{10}{x}$

$5x = 100$

$x = 20$

4. In right ΔABC, $\overline{CD}$ is the altitude drawn to hypotenuse $\overline{AB}$. If CD = 6, AD = 3, and DB = 5x - 3, find x.



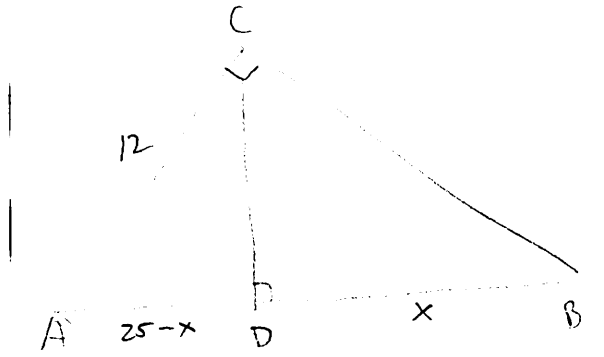
$$\frac{3}{6} = \frac{6}{5x-3}$$

$$15x - 9 = 36$$

$$15x = 45$$

$$x = 3$$

5. In right ΔABC, $\overline{CD}$ is the altitude drawn to hypotenuse $\overline{AB}$. AC = 12 and AB = 25. If BD is represented by x, write and solve an equation to find x.



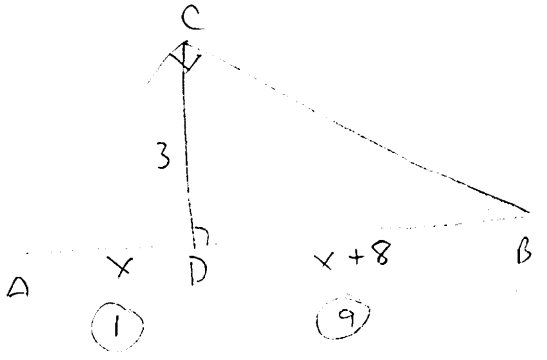
$$\frac{25-x}{12} = \frac{12}{25}$$

$$625 - 25x = 144$$

$$25x = 481$$

$$x = 19.24$$

6. In right ΔABC, $\overline{CD}$ is the altitude drawn to hypotenuse $\overline{AB}$. If CD = 3 cm, and if DB exceeds AD by 8 cm, find AD and DB.



$$\frac{x}{3} = \frac{3}{x+8}$$

$$x^2 + 8x - 9 = 0$$

$$(x+9)(x-1) = 0$$

$$x = 1$$