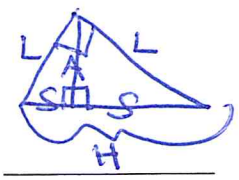
$\frac{H}{L}=\frac{L}{S}$ $\frac{S}{A}=\frac{A}{S}$

Name Schlansky L involved A involved Date

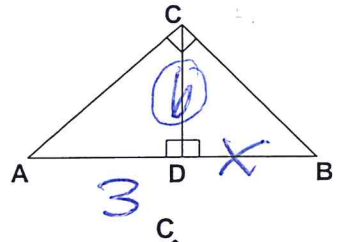
Mr. Schlansky Geometry



Altitude Drawn to a Right Triangle

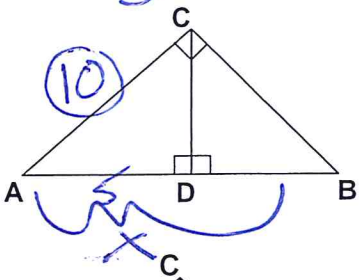
1. If $\overline{AD}=3$ and $\overline{CD}=6$, find $\overline{DB}$

$\frac{S}{A}=\frac{A}{S}$ $\frac{3}{6}=\frac{6}{x}$ $\frac{3x}{3}=\frac{36}{3}$ $x=12$



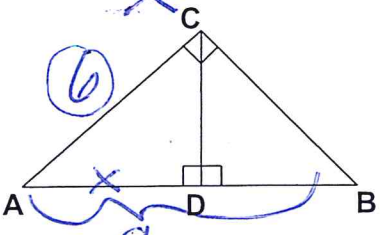
2. If $\overline{AC}=10$ and $\overline{AD}=5$, find $\overline{AB}$

$\frac{H}{L}=\frac{L}{S}$ $\frac{x}{10}=\frac{10}{5}$ $\frac{5x}{5}=\frac{100}{5}$ $x=20$



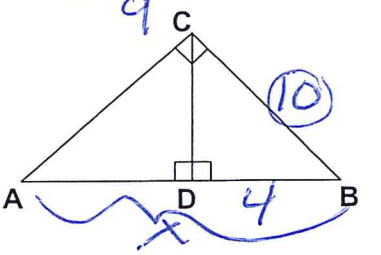
3. If $\overline{AC}=6$ and $\overline{AB}=9$, find $\overline{AD}$

$\frac{H}{L}=\frac{L}{S}$ $\frac{9}{6}=\frac{6}{x}$ $\frac{9x}{9}=\frac{36}{9}$ $x=4$



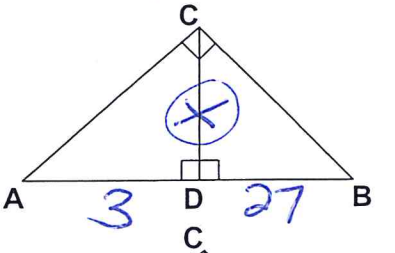
4. If $\overline{DB}=4$ and $\overline{BC}=10$, find $\overline{AB}$

$\frac{H}{L}=\frac{L}{S}$ $\frac{x}{10}=\frac{10}{4}$ $\frac{4x}{4}=\frac{100}{4}$ $x=25$



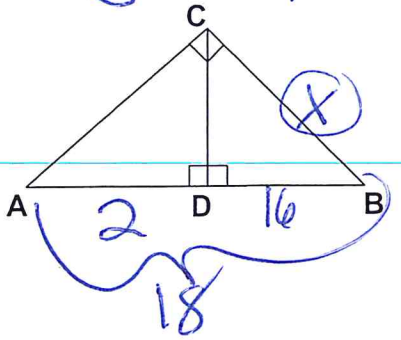
5. If $\overline{AD}=3$ and $\overline{DB}=27$, find $\overline{CD}$

$\frac{S}{A}=\frac{A}{S}$ $\frac{3}{x}=\frac{x}{27}$ $\sqrt{x^2}=\sqrt{81}$ $x=9$



6. If $\overline{AD}=2$ and $\overline{AB}=18$, find $\overline{BC}$ to the nearest tenth

$\frac{H}{L}=\frac{L}{S}$ $\frac{18}{x}=\frac{x}{16}$ $\sqrt{x^2}=\sqrt{288}$ $x=17.0$

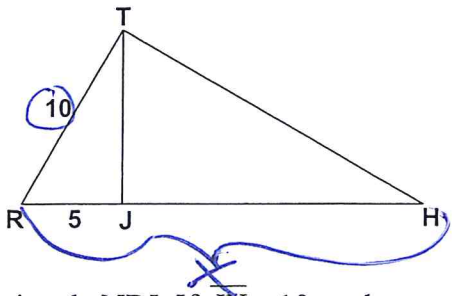


$\frac{18}{x}=\frac{x}{16}$

7. Altitude $\overline{TJ}$ is drawn to right triangle RTH. What is the measure of $\overline{RH}$?

$\frac{H}{L}=\frac{L}{S}$ $\quad \frac{8x}{8}=\frac{100}{8}$

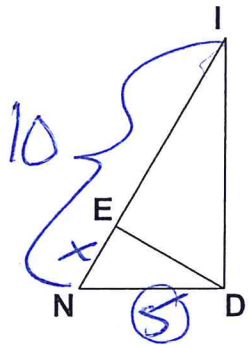
$\frac{x}{10}=\frac{10}{5}$ $\quad x=20$



8. In the diagram below, $\overline{DE}$ is an altitude drawn to right triangle NDI. If $\overline{IN}=10$, and $\overline{DN}=5$, find $\overline{EN}$.

$\frac{H}{L}=\frac{L}{S}$ $\quad \frac{10x}{10}=\frac{25}{10}$

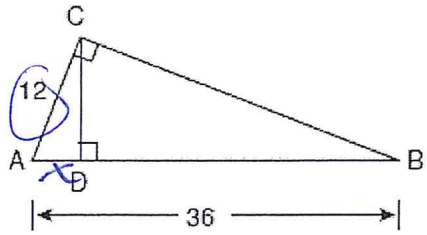
$\frac{10}{5}=\frac{5}{x}$ $\quad x=2.5$



9. In the diagram below of right triangle ACB, altitude $\overline{CD}$ is drawn to hypotenuse $\overline{AB}$.

$\frac{H}{L}=\frac{L}{S}$ $\quad \frac{36x}{36}=\frac{144}{36}$

$\frac{36}{12}=\frac{12}{x}$ $\quad x=4$

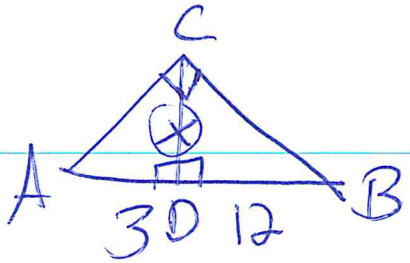


If $AB = 36$ and $AC = 12$, what is the length of $\overline{AD}$?

1) 32
2) 6
3) 3
4) 4

10. In right triangle ABC, altitude $\overline{CD}$ is drawn to hypotenuse $\overline{AB}$.
If $AD = 3$ and $DB = 12$, what is the length of altitude $\overline{CD}$?

1) 6
2) $6\sqrt{5}$
3) 3
4) $3\sqrt{5}$



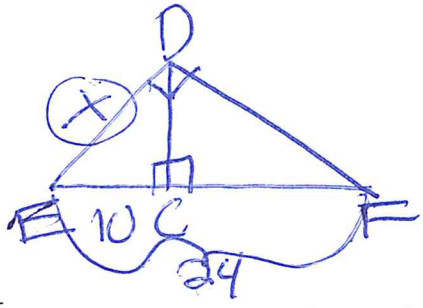
$\frac{S}{A}=\frac{A}{S}$ $\quad x^2=36$

$x=6$

$\frac{3}{x}=\frac{x}{12}$

11. Line segment CD is the altitude drawn to hypotenuse $\overline{EF}$ in right triangle ECF. If $EC = 10$ and $EF = 24$, then, to the *nearest tenth*, ED is

1) 4.2
2) 5.4
3) 15.5
4) 21.8



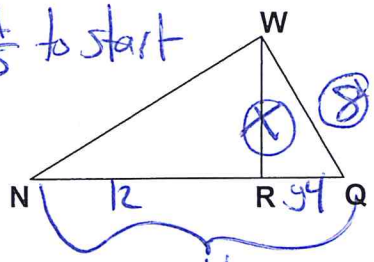
$\frac{24}{x} = \frac{x}{10}$

$\sqrt{x^2} = \sqrt{240}$

$x = 15.5$

12. Altitude $\overline{WR}$ is drawn to right triangle NWQ. If $\overline{QW} = 8$ and $\overline{NQ} = 16$, find $\overline{WR}$ to the nearest tenth.

Don't have enough information to do $\frac{S}{A} = \frac{A}{S}$ to start



$16 - 4 = 12$ 16

$\frac{\#}{L} = \frac{L}{S}$

$\frac{16}{8} = \frac{8}{y}$

$16y = 64$

$\frac{16y}{16} = \frac{64}{16}$

$y = 4$

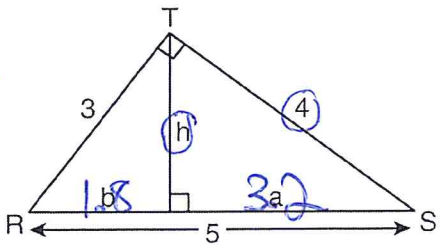
$\frac{S}{A} = \frac{A}{S}$

$\frac{12}{x} = \frac{x}{4}$

$\sqrt{x^2} = \sqrt{48}$

$x = 6.9$

13. In the diagram below, $\triangle RST$ is a $3-4-5$ right triangle. The altitude, h, to the hypotenuse has been drawn. Determine the length of h.



Don't have enough information to do $\frac{S}{A} = \frac{A}{S}$ to start

$\frac{\#}{L} = \frac{L}{S}$

$\frac{5}{4} = \frac{4}{a}$

$5a = 16$

$\frac{5a}{5} = \frac{16}{5}$

$a = 3.2$

$\frac{S}{A} = \frac{A}{S}$

$\frac{1.8}{h} = \frac{h}{3.2}$

$\sqrt{h^2} = \sqrt{5.76}$

$h = 2.4$