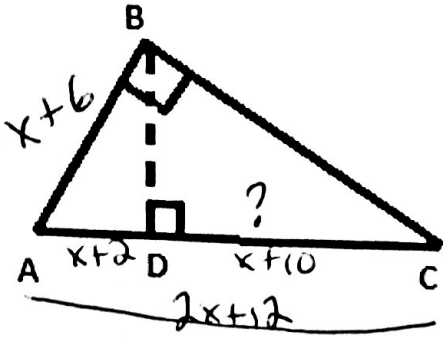
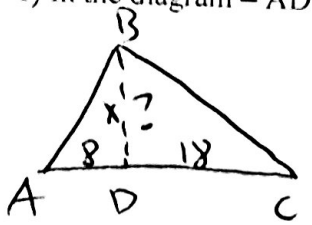
Name: _____
Date: _____
Class: _____

Geometry
Unit 4
HW 4-3



1) In the diagram – AD = 8, DC = 18, find BD

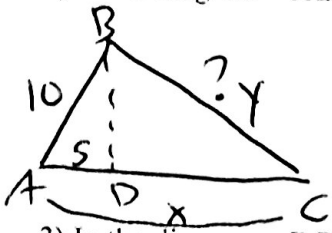


$\frac{x}{8} = \frac{18}{x}$

$\sqrt{x^2} = \sqrt{144}$

$x = 12 = BD$

2) In the diagram – AB = 10, AD = 5, find BC



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

$5x = 100$

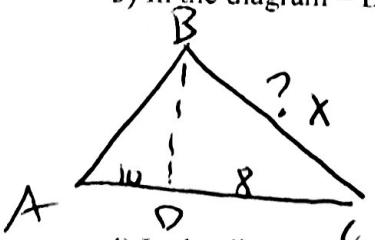
$x = 20$

$10^2 + y^2 = 20^2$

$y^2 = 300$

$y = \sqrt{300} = BC$

3) In the diagram – DC = 8, AD = 10, find BC

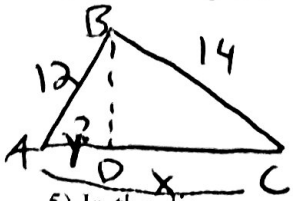


$\frac{x}{8} = \frac{18}{x}$

$x^2 = 144$

$x = 12 = BC$

4) In the diagram – AB = 12, BC = 14, Find AD.



$12^2 + 14^2 = x^2$

$x = \sqrt{340}$

$\frac{12}{y} = \frac{\sqrt{340}}{12}$

$\frac{\sqrt{340}y}{\sqrt{340}} = \frac{144}{\sqrt{340}}$

$y = 7.8$

5) In the diagram – AB = x + 6, AD = x + 2, DC = x + 10 find DC.

$\frac{(x+6)}{(x+2)} = \frac{(2x+12)}{(x+6)}$

$(x+6)(x+6) = (x+2)(2x+12)$

$x^2+6x+6x+36 = 2x^2+12x+4x+24$

$x^2+12x+36 = 2x^2+16x+24$

$0 = x^2+4x-12$

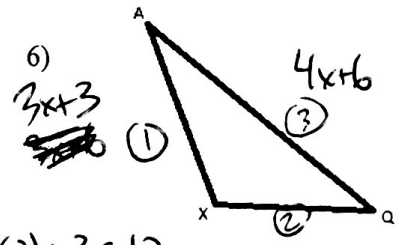
$(x+6)(x-2)$

~~$x=-6$~~ $x=2$ gives neg sides

~~$2+10$~~

$2+10 = 12 = DC$

6)

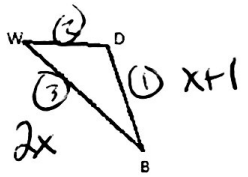


BDW

$\triangle AXQ \sim \triangle BDW$

If AX = 3x + 3, BW = 2x, BD = x + 1, and AQ = 4x + 6, find the scale factor for these triangles

must have common SF



$\frac{(3x+3)}{(x+1)} = \frac{(4x+6)}{(2x)}$

$2x(3x+3) = (4x+6)(x+1)$

$6x^2+6x = 4x^2+4x+6x+6$

$6x^2+6x = 4x^2+10x+6$

$2x^2-4x-6=0$

$2(x^2-2x-3)=0$

$2(x-3)(x+1)=0$

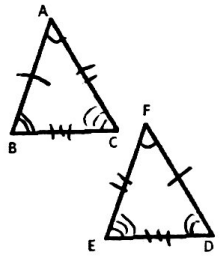
$x=3$ $x=-1$ gives neg side

$AX \rightarrow 3(3)+3=12$

$BD \rightarrow 3+1=4$

$SF = \frac{12}{4} = \frac{3}{1}$

7)



FDE

$\triangle ABC \cong \triangle FDE$

$m\angle B = x^2+2x+8$, $m\angle E = 2x^2-x-2$, $m\angle D = 10x-4$, find $m\angle F$.

$m\angle B = m\angle D$

$x^2+2x+8 = 10x-4$

$x^2-8x+12=0$

$(x-6)(x-2)$

$x=6$ $x=2$

Both work

$m\angle D = 10(6)-4 = 56°$

$m\angle E = 2(6)^2-6-2 = 64°$

180

$56+64=120$

$60° = m\angle F$