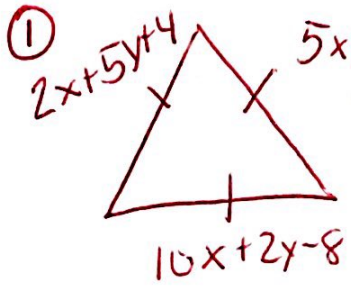
4.1 More Practice *(Please put your work on the same sheet as your homework. **NOT HERE.**)*

1. If a triangle with sides of $2x + 5y + 4$, $5x + 3y + 3$, and $10x + 2y - 8$ is equilateral, then find the product of x and y. * Draw picture

2. In ΔABC, $AB = 2x^2 + 3x + 1$, $BC = 4x^2 - 6x + 5$, and $AC = 3x^2$. If ΔABC is isosceles with base AC, find the length of all three sides.

3. If the perimeter of a triangle is 76u and the sides have measures of $x^2 + 5x + 2$, $x^2 - 2x + 1$, $x^2 - 4x + 3$, find the value of x. What happened?

① 

Need 2 equations

$\begin{cases} 2x+5y+4 = 5x+3y+3 \\ 10x+2y-8 = 5x+3y+3 \end{cases}$

Solve system

$\begin{cases} -3x+2y = -1 \\ 5x-y = 11 \end{cases}$ ×2

$\begin{cases} -3x+2y = -1 \\ 10x-2y = 22 \end{cases}$

$7x = 21$

$x = 3$

$5(3)-y = 11$

$15-y = 11$

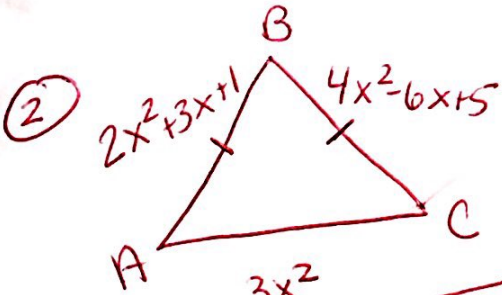
$-15 \quad -15$

$-y = -4$

$y = 4$

Product of x and y

$3(4) = 12$

② 

$2x^2+3x+1 = 4x^2-6x+5$

$0 = 2x^2-9x+4$

$0 = (x-\frac{1}{2})(x-\frac{8}{2})$

$0 = (2x-1)(x-4)$

$x = \frac{1}{2} \quad x = 4$

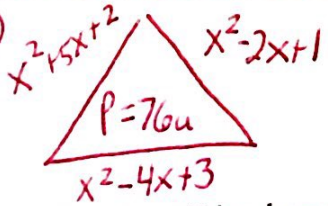
-1 × -8 = 8, -1 + -8 = -9

IF $x = \frac{1}{2}$

$AB = 3$; $BC = 3$; $AC = 0.75$

IF $x = 4$

$AB = 45$; $BC = 45$; $AC = 48$

③ 

$x^2+5x+2+x^2-2x+1+x^2-4x+3 = 76$

$3x^2-x+6 = 76$

$3x^2-x-70 = 0$

$(x+14)(x-\frac{15}{3}) = 0$

$(3x+14)(x-5) = 0$

-210 × -1 = 14, 14 + -15 = -1

$x = -\frac{14}{3} \quad x = 5$

IF $x = 5$ sides = 52; 16; 8

IF $x = -14/3$ sides = 4/9, 32 4/9, 43 4/9

* What happened?

Neither work because 2 smallest sides need to add to be larger than the third so both x-values do not work...