Algebra 1 Quiz   11.8.13
Version A

Exponent Pro __Key__

period _____

1) Simplify: $5(-2x + 7) - 6(5x - 4)$

combine like terms

$-10x + 35 - 30x + 24$

$\boxed{-40x + 59}$

2) Graph the linear inequality

$$y < -\frac{2}{3}x + 2$$

x	y
3	0
0	2
-3	4
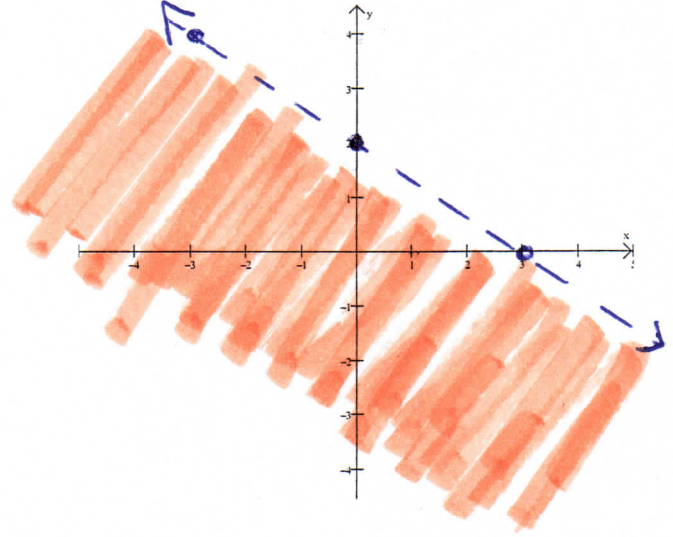
3) Solve the system of linear equations using *substitution*

$$y = 2x + 7$$
$$3x - y = -9$$

$3x - (2x + 7) = -9$

$3x - 2x - 7 = -9$

$x - 7 = -9$
$\quad +7 \quad +7$

$\boxed{x = -2}$

$y = 2x + 7$

$y = 2(-2) + 7$

$y = -4 + 7$

$\boxed{y = 3}$

$\boxed{\text{solution: } (-2, 3)}$

4) Simplify $\quad -3x^5(x^2y^4)^3$

$-3x^5(x^2y^4)(x^2y^4)(x^2y^4)$

$-3 \underbrace{x^5 x^2 x^2 x^2}_{x^{11}} \underbrace{y^4 y^4 y^4}_{y^{12}} = \boxed{-3x^{11}y^{12}}$

5) Perimeter Question: A rectangle garden has a length of $3x - 3$ and a width of $x + 4$ and a perimeter of 58 feet. What is the length and width of the garden to the nearest foot? (Draw a picture)

$3x - 3$

$x + 4$ $\boxed{P = 58}$ $x + 4$

$3x - 3$

substitute

$P = 2l + 2w$ ← *how to find the perimeter*
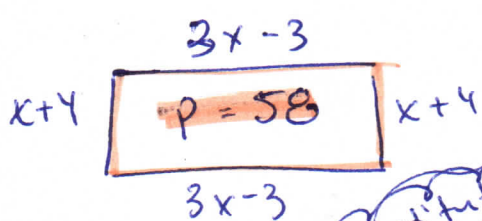
$58 = 2(3x - 3) + 2(x + 4)$

$58 = 6x - 6 + 2x + 8$

$58 = 8x + 2$
$-2 \qquad -2$

$\dfrac{56}{8} = \dfrac{8x}{8}$ *substitute*

$\boxed{x = 7}$

length $= 3(7) - 3$
$= 18 \text{ feet}$

width $= (7) + 4 = 11 \text{ feet}$

Bonus!! Simplify

$$\left(\frac{-6x \cdot z^2}{2y \cdot y^5}\right)^2 \qquad \left(\frac{-6x^3y^{-5}}{2z^{-2}y}\right)^2$$

$$\left(\frac{-3x^3 \cdot z^2}{y^6}\right)^2 = \left(\frac{-3x^3z^2}{y^6}\right)\left(\frac{-3x^3z^2}{y^6}\right) = \frac{(-3)(-3)\cdot \overbrace{x^3 \cdot x^3}^{x^6} \cdot \overbrace{z^2 \cdot z^2}^{z^4}}{\underbrace{y^6 \cdot y^6}_{y^{12}}} = \boxed{\frac{9x^6z^4}{y^{12}}}$$