Cornell Notes	Topic/Objective: Review for Quiz	Name:
		Class/Period: 4th
		Date: 9/16/16

Essential Question: What do I need to know for the quiz

Questions:

Notes:

Fraction } look at warmup
Radicals }

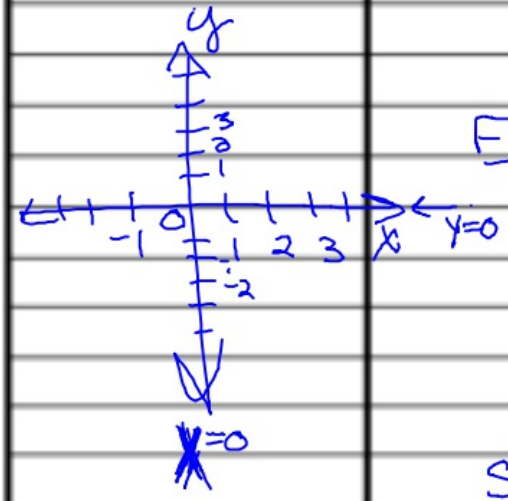
Checking solutions to linear equations — x, y

is ordered pair (2, 7) a solution to $3x - 4y = 9x + 2y$?

$3(2) - 4(7) \stackrel{?}{=} 9(2) + 2(7)$

$-22 \neq 32$

NO



Finding the intercepts of a graph

Find the intercepts for the graph of $4x + 7y = 14$

(3.5, 0) (y=0) → x-int 3.5 or 7/2

(x=0) → y-int 2

Slope and Slope-intercept form of a line

Given two points (x_1, y_1) and (x_2, y_2), the slope (m) of the line between the two is found to be: $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x}$

(-2, 5) and (3, 9)

$m = \frac{5-9}{-2-3} = \frac{-4}{-5} = \frac{4}{5}$

Questions:	Notes:
	Slope-intercept form of the line
	$(-2,5)$ and $(3,9)$
	x_1 y_1
	$y = mx + b$
	slope intercept
	point-slope form $y - y_1 = m(x - x_1)$
	$y - 9 = \frac{4}{5}(x - 3)$
	$y - 9 = \frac{4}{5}x - \frac{12}{5}$
	$+9 \quad +9$
	$y = \frac{4}{5}x - \frac{12}{5} + 9$
	$y = \frac{4}{5}x + \frac{33}{5}$

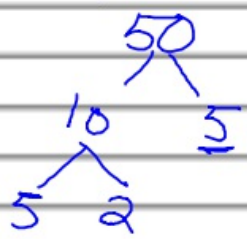
Questions:	Notes:

$\sqrt{50} - \sqrt{32} = 5\sqrt{2} - 4\sqrt{2} = \sqrt{2}$

* looking for factors that are perfect squares

① looking for perfect squares

② Break down to prime factors



$\sqrt{50} \overset{①}{=} \sqrt{25 \cdot 2} = \sqrt{25} \cdot \sqrt{2} = 5\sqrt{2}$

$\overset{②}{=} \sqrt{5 \cdot 5 \cdot 2} = 5\sqrt{2}$

$\sqrt{32} = \sqrt{4 \cdot 8} = \sqrt{4} \cdot \sqrt{8} = 2\sqrt{8}$

$= 2\sqrt{2 \cdot 4} = 2 \cdot \sqrt{2} \cdot \sqrt{4}$

$= 2\sqrt{2} \cdot 2$

$= 4\sqrt{2}$

Ex $\sqrt{125} \cdot \sqrt{5} \rightarrow \sqrt{625}$

$\sqrt{25 \cdot 5} \cdot \sqrt{5}$

$\sqrt{25} \cdot \sqrt{5} \cdot \sqrt{5}$

$5\sqrt{5 \cdot 5}$

$5\sqrt{25}$

$5 \cdot 5$

25

Ex $\dfrac{\sqrt{28}}{\sqrt{27}} = \dfrac{\sqrt{64 \cdot 2}}{\sqrt{9 \cdot 3}} = \dfrac{8\sqrt{2}}{3\sqrt{3}}$

$\sqrt{\dfrac{128}{27}} = \dfrac{\sqrt{128}}{\sqrt{27}}$

$\dfrac{\sqrt{128}}{\sqrt{32}} = \sqrt{\dfrac{128}{32}} = \sqrt{\dfrac{8}{2}}$

$= \sqrt{4} = 2$

Questions:	Notes:

Factoring Quadratics

- perfect square
- completing the square
- by grouping
- guess + check
- Quadratic Equation

Engineer's Trick (particular kind of equation)

$3x^2 - 2x + c = 3x^2 + 6x \cdot d + d^2$

$c = 1/9$

$d = -1/3$

$3x^2 = 3x^2$

$-2x = 6x \cdot d$

$-2 = 6d$

$-1/3 = d$

$c = d^2$

$c = (-1/3)^2$

$c = 1/9$

Ex) Perfect Square — Square Root Method

$x^2 + 4x + 4 = 16$

$(x+2)(x+2) = 16$

$\sqrt{(x+2)^2} = \pm\sqrt{16}$

$x + 2 = \pm 4$

$x + 2 = 4$ and $x + 2 = -4$

$x = 2$ and $x = -6$

Questions:	Notes:
	Completing the Square
	$x^2+3x-5=0$ $\quad ax^2+bx+c$
	$ax^2+bx+\left(\frac{b}{2}\right)^2-\left(\frac{b}{2}\right)^2+c$
	$x^2+3x+\frac{9}{4}-\frac{9}{4}-5=0$
	$\frac{b}{2}=\frac{3}{2}$ $\quad \left(\frac{b}{2}\right)^2=\left(\frac{3}{2}\right)^2=\frac{9}{4}$
	$\left(x+\frac{3}{2}\right)^2=5+\frac{9}{4}$
	$\left(x+\frac{3}{2}\right)^2=\frac{29}{4}$ ← Square root method
one, none, ∞	Systems of Equations
	$3x-2y=-3$
	$\rightarrow x+3y=8$ $\quad x=8-3y$
	$3(8-3y)-2y=-3$
	$24-9y-2y=-3$
	$24-11y=-3$
	$-11y=-27$
	$y=\frac{27}{11}$
	$x=8-3\left(\frac{27}{11}\right)$
	$x=7/11$ $\quad (7/11, 27/11)$

Questions:	Notes:
	Systems of Inequalities
	Ex) $2x-3y \geq 6$ $x+y < 2$