Algebra 2 Notes Name: Key

Order of Operations, Slope, and Intercepts

For the first day back, we are going to refresh your memory regarding some key ideas in algebra.

Example 1: Simplify. Be sure to show your work!

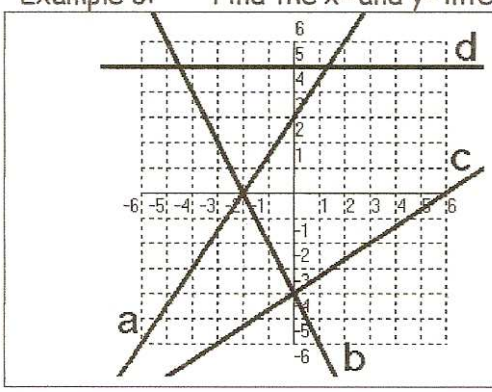
PEMDAS

a. $2^2 \cdot 3^2 - (5^2 - 4^2)$ $2^2 \cdot 3^2 - (25-16)$ $4 \cdot 9 - 9$ $36 - 9$ $\boxed{27}$	b. $12 - 2(5^2 - 3 \cdot 4)$ $12 - 2(25 - 3 \cdot 4)$ $12 - 2(25-12)$ $12 - 2(13)$ $12 - 26$ $\boxed{-14}$
c. $64 \div 4 \cdot 2 + 3[2 - (10-12)]$ $64 \div 4 \cdot 2 + 3[2-(-2)]$ $64 \div 4 \cdot 2 + 3(4)$ $16 \cdot 2 + 3 \cdot 4$ $32 + 12$ $\boxed{44}$	d. $\dfrac{12 - 10 + 5 \cdot 2}{3^2 - (1-2)^3}$ $\dfrac{12 - 10 + 10}{3^2 - (-1)^3}$ $\dfrac{2 + 10}{9 - (-1)}$ $\dfrac{12}{10} = \boxed{\dfrac{6}{5}}$

Example 2: Find the slope of the line passing through the points. Remember, $m = \dfrac{y_2 - y_1}{x_2 - x_1}$ or $m = \dfrac{\Delta y}{\Delta x}$.

a. $(-3,6)$ and $(-2,4)$ $(-2,4)$ $m = \dfrac{6-4}{-3+2}$ $m = \dfrac{2}{-1}$ $\boxed{m=-2}$	b. $(6,-10)$ and $(-2,-10)$ $(-2,-10)$ $m = \dfrac{-10+10}{6+2}$ $m = \dfrac{0}{8}$ $\boxed{m=0}$	c. $(3,7)$ and $(8,-8)$ $(8,-8)$ $m = \dfrac{7+8}{3-8}$ $m = \dfrac{15}{-5}$ $\boxed{m=-3}$

Example 3: Find the x- and y- intercepts AND the slope of each line.



	x-intercept	y-intercept	slope
a. line a	$(-2,0)$	$(0,3)$	$+\boxed{\dfrac{3}{2}}$
b. line b	$(-2,0)$	$(0,-4)$	$\dfrac{-4}{2} = \boxed{-2}$
c. line c	$(6,0)$	$(0,-4)$	$+\dfrac{4}{6} = \boxed{\dfrac{2}{3}}$
d. line d	none	$(0,5)$	$\boxed{0}$