Name:_____ **Date:**_____ **Per:**_____

Midterm Review Warm Up 5

Section 5.1 and 5.2 – Write Equations of Lines in Slope-Intercept Form

Ex: Slope: 5, y-intercept: −2

$y = 5x - 2$

Ex: Slope: ½ and passes through (2, −5)

$y = mx + b$
$-5 = \frac{1}{2}(2) + b$
$-5 = 1 + b$
$-6 = b$

$y = \frac{1}{2}x - 6$

Ex: Passes through (8, 0) and (−4, 9)

$m = \frac{9-0}{-4-8} = \frac{9}{-12} = -\frac{3}{4}$

$y = mx + b$
$0 = -\frac{3}{4}(8) + b$
$0 = -6 + b$
$6 = b$

$y = -\frac{3}{4}x + 6$

Section 5.5 – Write Equations of Parallel and Perpendicular Lines (in slope-intercept form)

Ex: Write the equation of the line that passes through the point (−2, 5) and is parallel to $3x + 6y = -12$

*start by finding the slope of the given line by putting it in slope-intercept form.

$3x + 6y = -12$
$-3x \quad -3x$
$\frac{6y}{6} = \frac{-12 - 3x}{6}$
$y = -2 - \frac{1}{2}x$ Since the slope of ***this*** is −½, and the lines are ***parallel***, then the slope of the line we are trying to write the equation of is also −½.

$5 = -\frac{1}{2}(-2) + b$ Plug in the original point given and the slope.
$5 = 1 + b$ Solve for b.
$4 = b$
$y = -\frac{1}{2}x + 4$ Write the equation of the line.

Ex: Write the equation of the line that passes through the point (5, 7) and is perpendicular to $2y + 5x = 8$

*Start by finding the slope of the given line by putting it in slope-intercept form.

$2y + 5x = 8$

$-5x \quad -5x$

$\frac{2y}{2} = \frac{8 - 5x}{2}$

$y = 4 - \frac{5}{2}x$ Since the slope of ***this*** line is $-\frac{5}{2}$, and the lines are ***perpendicular***, then the slope of the line we are trying to write the equation of is the ***opposite reciprocal***, or $\frac{2}{5}$

$7 = \frac{2}{5}(5) + b$	Plug in the original point given and the slope.
$7 = 2 + b$	Solve for b.
$5 = b$	
$y = \frac{2}{5}x + 5$	Write the equation of the line.

Section 5.4 – Writing Equations in Standard Form

Ex: Write the equation of the line that passes through the points (−2, 12) and (2, 8) in ***standard form***.

Standard Form: $Ax + By = C$

*Start by writing the equation in $y = mx + b$ by finding the slope and the y-intercept.

$y = -1x + 10$	Then put the equation in standard form by moving the x term so it is on the same side as y.
$x + y = 10$	*Make sure that after doing so A is positive, and A, B, and C are all integers.

Ex: Find the missing coefficient and then ***write the equation in standard form***.

$3x + By = -5$ and passes through the point (−2, 3)

$3(-2) + B(3) = -5$	*Plug in x and y
$-6 + 3B = -5$	Solve for B (or the missing coefficient.
$3B = 1$	
$B = 1/3$	

$3x + \frac{1}{3}y = -5$	Plug back into the equation.
$9x + y = -15$	*Make sure that A, B, C are integers.