November 28

1. Let $f(x) = 7x^2 - 5x + 3$ and $g(x) = 2x^2 + 4x - 6$.

Part A: Find $f(x) + g(x)$

$7x^2 - 5x + 3 + 2x^2 + 4x - 6$

$9x^2 - x - 3$

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Let $f(x) = 7x^2 - 5x + 3$ and $g(x) = 2x^2 + 4x - 6$.

Part B: Find $f(x) - g(x)$

$7x^2 - 5x + 3 - (2x^2 + 4x - 6)$

$7x^2 - 5x + 3 - 2x^2 - 4x + 6$

$5x^2 - 9x + 9$

$$\begin{array}{r} 7x^2 - 5x + 3 \\ -\ 2x^2 + 4x - 6 \\ \hline 5x^2 - 9x + 9 \end{array}$$

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Let $f(x) = 7x^2 - 5x + 3$ and $g(x) = 2x^2 + 4x - 6$.

Part C: Find $g(x) - f(x)$

$2x^2 + 4x - 6 - (7x^2 - 5x + 3)$

$2x^2 + 4x - 6 - 7x^2 + 5x - 3$

$-5x^2 + 9x - 9$

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Let $f(x) = 7x^2 - 5x + 3$ and $g(x) = 2x^2 + 4x - 6$.

$f(x) \cdot g(x)$

$(7x^2 - 5x + 3)(2x^2 + 4x - 6)$

$14x^4 + 28x^3 - 42x^2 - 10x^3 - 20x^2 + 30x + 6x^2 + 12x - 18$

$14x^4 + 18x^3 - 56x^2 + 42x - 18$

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$(3x^2 - 4x)(6x^3 - 2x + 8)$

$18x^5 - 6x^3 + 24x^2 - 24x^4 + 8x^2 - 32x$

$18x^5 - 24x^4 - 6x^3 + 32x^2 - 32x$

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$\frac{12x^4}{6y^3}$

$\frac{2x^4}{y^3}$

Polynomials NOT closed under Division

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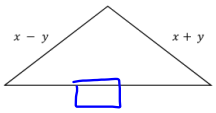
2. The perimeter of the triangle below is $4x + 3y$. Find the measure of the missing side.



$x - y + x + y + \square = 4x + 3y$

$2x + \boxed{2x+3y} = 4x + 3y$

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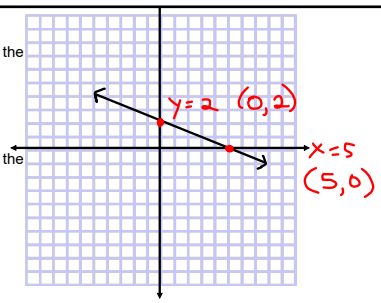
x intercept is the place where the line crosses the x axis

y intercept is the place where the line crosses the y axis



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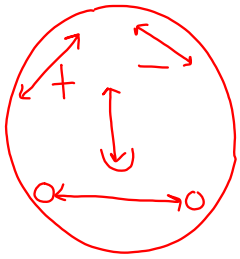
Slope Man



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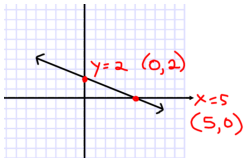

$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1}$

$(0,2)(5,0)$ $x_1 y_1$ $x_2 y_2$ $\frac{0-2}{5-0} = \boxed{\frac{-2}{5}}$

$\text{Slope} = \frac{\text{Rise}}{\text{Run}}$

$\frac{2}{-5}$

$m = \text{slope}$

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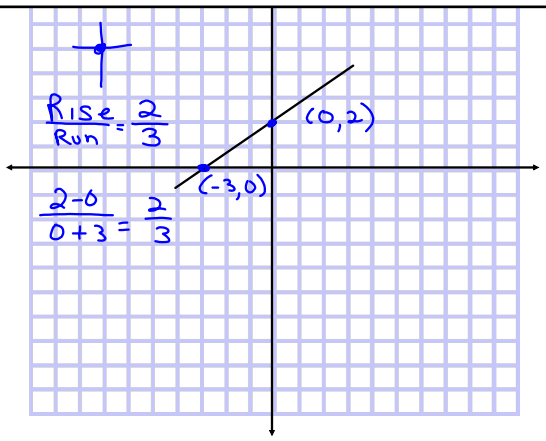

$\frac{\text{Rise}}{\text{Run}} = \frac{2}{3}$

$\frac{2-0}{0+3} = \frac{2}{3}$

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$(5,6)(10,-4)$ $x\ y$ $x_2\ y_2$ $\frac{y_2 - y_1}{x_2 - x_1}$

$\text{Slope } \frac{-4-6}{10-5} = \frac{-10}{5} = -2$

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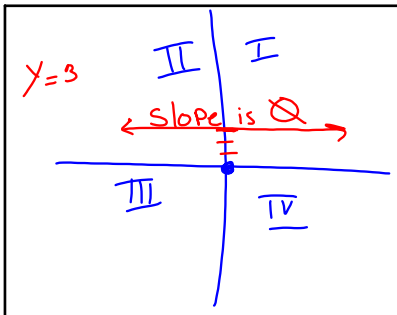

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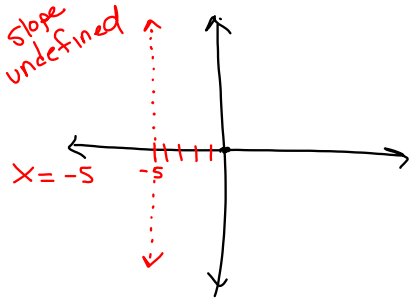

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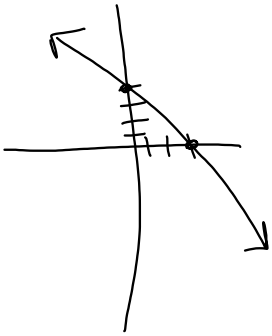

$4x + 3y = 12$

x intercept

$y = 0$

$x = 3$

$(3,0)$

y intercept

$(0,4)$

$y = 4$

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$-2x - 3y = 6$

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

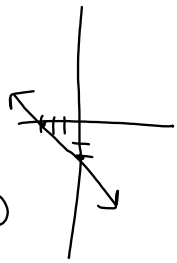
$x = -3$

$(-3,0)$

$\frac{-3y}{-3} = \frac{6}{-3}$

$y = -2$

$(0,-2)$



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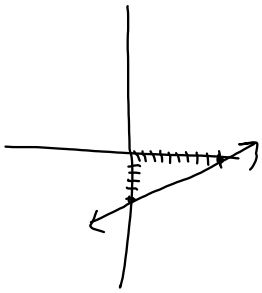
$2x - 4y = 20$

$(10,0)$ $x = 10$

$(0,-5)$ $y = -5$



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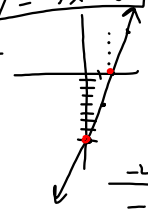
$y = 4x - 8$

$y = mx + b$ slope intercept form

$ax + by = c$ standard form

$m = \frac{4}{1}$



$y = 4x - 8$

$-4x \quad -4x$

$-4x + y = -8$

What are the x and y intercepts?

$y = -8$ $(0,-8)$

$\frac{-4x}{-4} = \frac{-8}{-4}$ $(2,0)$

$x = 2$

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Example

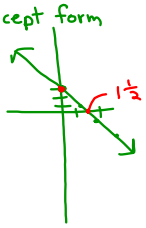
$y = -2x + 3$

Slope intercept form

$m = -2$

$b = 3$

$m = \frac{-2}{1}$



Standard form

$ax + by = c$

$y = -2x + 3$

$+2x \quad +2x$

$2x + y = 3$

$\frac{\cancel{2}x}{\cancel{2}} = \frac{3}{2}$

$x = \frac{3}{2} \quad (\frac{3}{2}, 0)$

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#11 Hw

$12\left(\frac{1}{3}x - \frac{1}{4}y = 2\right)$

$4x - 3y = 24$

$x = 6$

$y = -8$

Find intercepts & Graph

$(3)\frac{1}{3}x = 2(3)$

$x = 6$

$(-4) - \frac{1}{4}y = 2(-4)$

$y = -8$

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