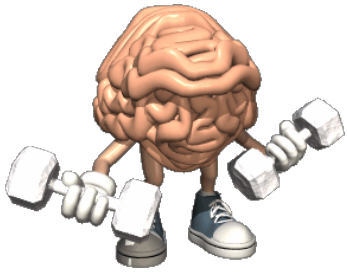
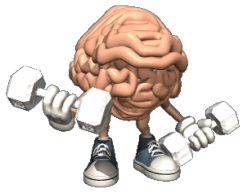
Warm Up



1) A line that passes through (-7, 2) and (3, -1)

a) Write an equation in point slope form:
b) Write an equation in slope intercept form:
c) State the x and y intercept

Warm Up



$m = \frac{-3}{10}$ x, y

1) A line that passes through (-7, 2) and (3, -1)

a) Write an equation in point slope form:

$y - y_1 = m(x - x_1)$

$y - 2 = \frac{-3}{10}(x + 7)$

b) Write an equation in slope intercept for:

$y = mx + b$

$10y - 20 = -3(x + 7)$

$10y - 20 = -3x - 21$

$10y = -3x - 21 + 20$

$\frac{10y}{10} = \frac{-3x}{10} - \frac{1}{10}$

$y = \frac{-3}{10}x - \frac{1}{10}$

c) State the x and y intercept

let $y = 0$ let $x = 0$

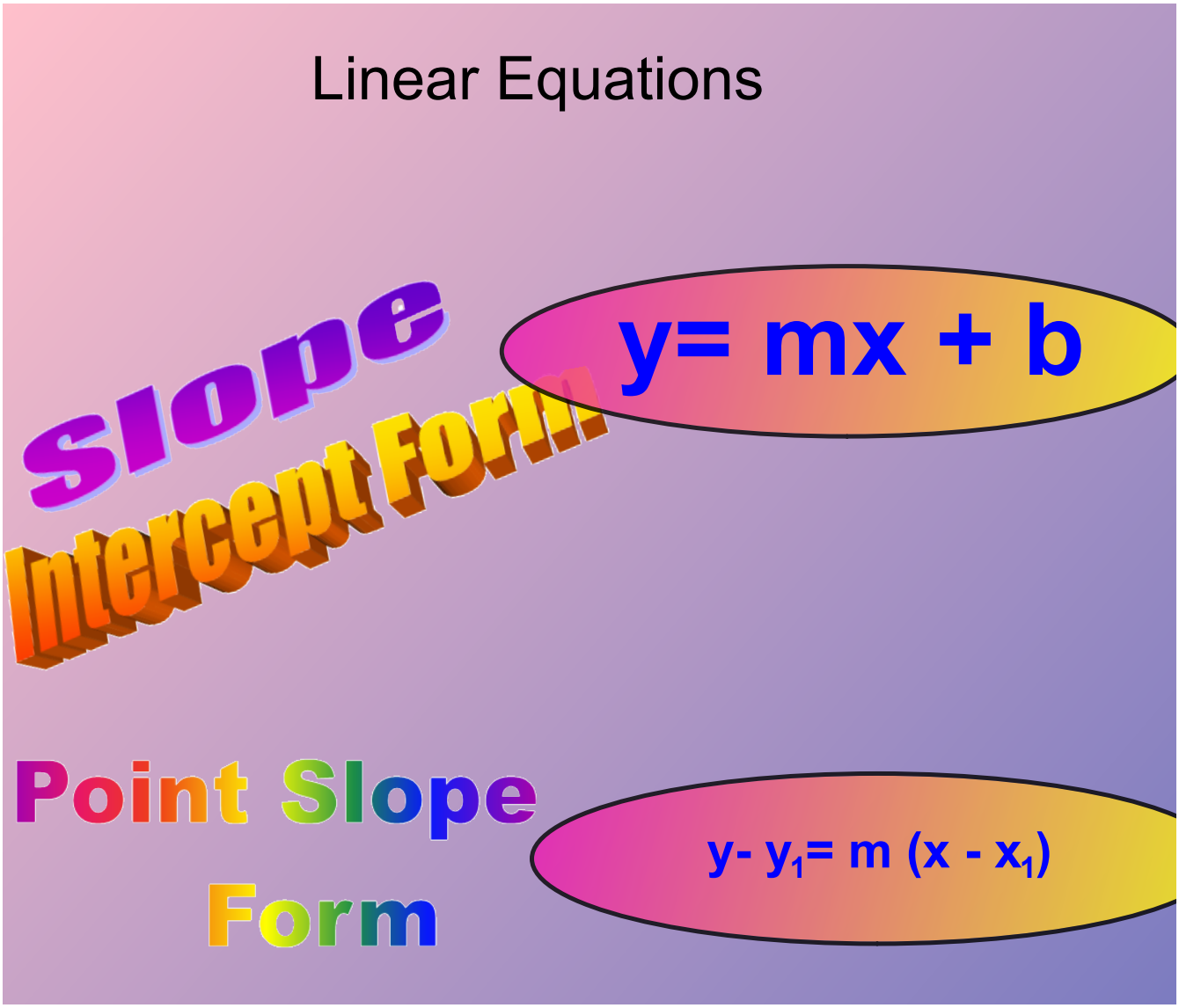
y-int $= -\frac{1}{10}$

$0 = \frac{-3}{10}x - \frac{1}{10}$

$\frac{1}{10} = \frac{-3x}{10}$

$\frac{1}{-3} = \frac{-3x}{-3}$

$-\frac{1}{3} = x \quad \left(-\frac{1}{3}, 0\right)$


Linear Equations
Slope Intercept Form
y= mx + b
Point Slope Form
y- y1= m (x - x1)

Two other forms of LinearEquations

Standard

Ax + By = C

- Where A,B and C are integers

Example:
2x + 7y = 10

General

Ax + By + C = 0

General Form of the Equation of a Linear Relation

$Ax + By + C = 0$ is the general form of the equation of a line, where A is a whole number, and B and C are integers.

Example:
2x + 7y - 10 = 0

Point - Slope to General Form

$y - 3 = \frac{2}{5}(x + 6)$

$\times 5 \quad \times 5 \quad \times 5$

$5y - 15 = 2(x + 6)$

$5y - 15 = 2x + 12$

$0 = 2x - 5y + 12 + 15$

$0 = 2x - 5y + 27$

Slope Intercept to General Form

x3 x3 x3

a) $y = -\frac{2}{3}x + 4$

$3y = -2x + 12$

$2x + 3y - 12 = 0$

5x-

General Form to Slope Intercept

$7x - 2y + 18 = 0$

$$\frac{7x}{2} + \frac{18}{2} = \frac{2y}{2}$$

$$\frac{7}{2}x + 9 = y$$

Point-slope to General form

x5 x5 x5

b) $y-1=\frac{3}{5}(x+2)$

$5y-5=3(x+2)$

$5y-5=3x+6$

$0=3x-5y+6+5$

$0=3x-5y+11$

Example 3 Determining the Slope of a Line Given Its Equation in General Form

Determine the slope of the line with this equation:

$3x - 2y - 16 = 0$

$y = mx + b$

CHECK YOUR UNDERSTANDING

$\frac{3x}{2} - \frac{16}{2} = \frac{2y}{2}$

$m = \frac{3x}{2} - 8 = y$

Example 2 Graphing a Line in General Form

a) Determine the x- and y-intercepts of the line whose equation is: $3x + 2y - 18 = 0$

y-int let $x = 0$

x-int let $y = 0$

SOLUTION

$3x + 2(0) - 18 = 0$

$3x - 18 = 0$

$\frac{3x}{3} = \frac{18}{3}$ $x = 6$ $(6, 0)$

$3(0) + 2y - 18 = 0$

$2y - 18 = 0$

$\frac{2y}{2} = \frac{18}{2}$ $(0, 9)$

$y = 9$

CHECK YOUR UNDERSTANDING

$y - y_1 = m(x - x_1)$

Class Work

Worksheet-To be handed in for marks

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4, 5, 6, 9,11,12,
14, 20, 21, 22 ,
23,24