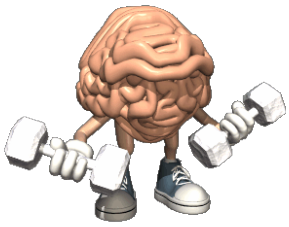
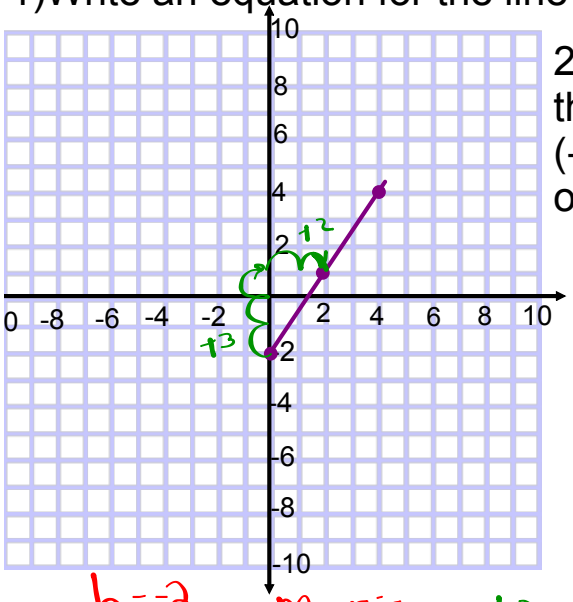
Quiz First then



1)Write an equation for the line :



$b = -2$ $m = \frac{rise}{run} = \frac{+3}{2}$

$y = mx + b$

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

2)Write an equation of a line that passes through (-7, 4) and (-5, 10) and has a y intercept of -5. $m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{10 - (4)}{-5 - (-7)}$

$= \frac{10 - 4}{-5 + (7)}$

$= \frac{6}{2}$

$b = -5$ $m = 3$

$y = mx + b$

$y = 3x - 5$

3) Given the equations $y = \frac{2}{5}x + 6$, state the

i) Slope $m = \frac{2}{5}$

ii) y-intercept $(0, 6)$ $b = 6$

iii) x- intercept

let $y = 0$ Solve for x

$y = \frac{2}{5}x + b$

$0 = \frac{2}{5}x + 6$

$0 \overset{-6}{=} \frac{2}{5}x + 6 \overset{-6}{}$

$5 \cdot -6 = \frac{2x}{5} \cdot 5$

$-30 = 2x$

$\frac{-30}{2} = \frac{2x}{2}$

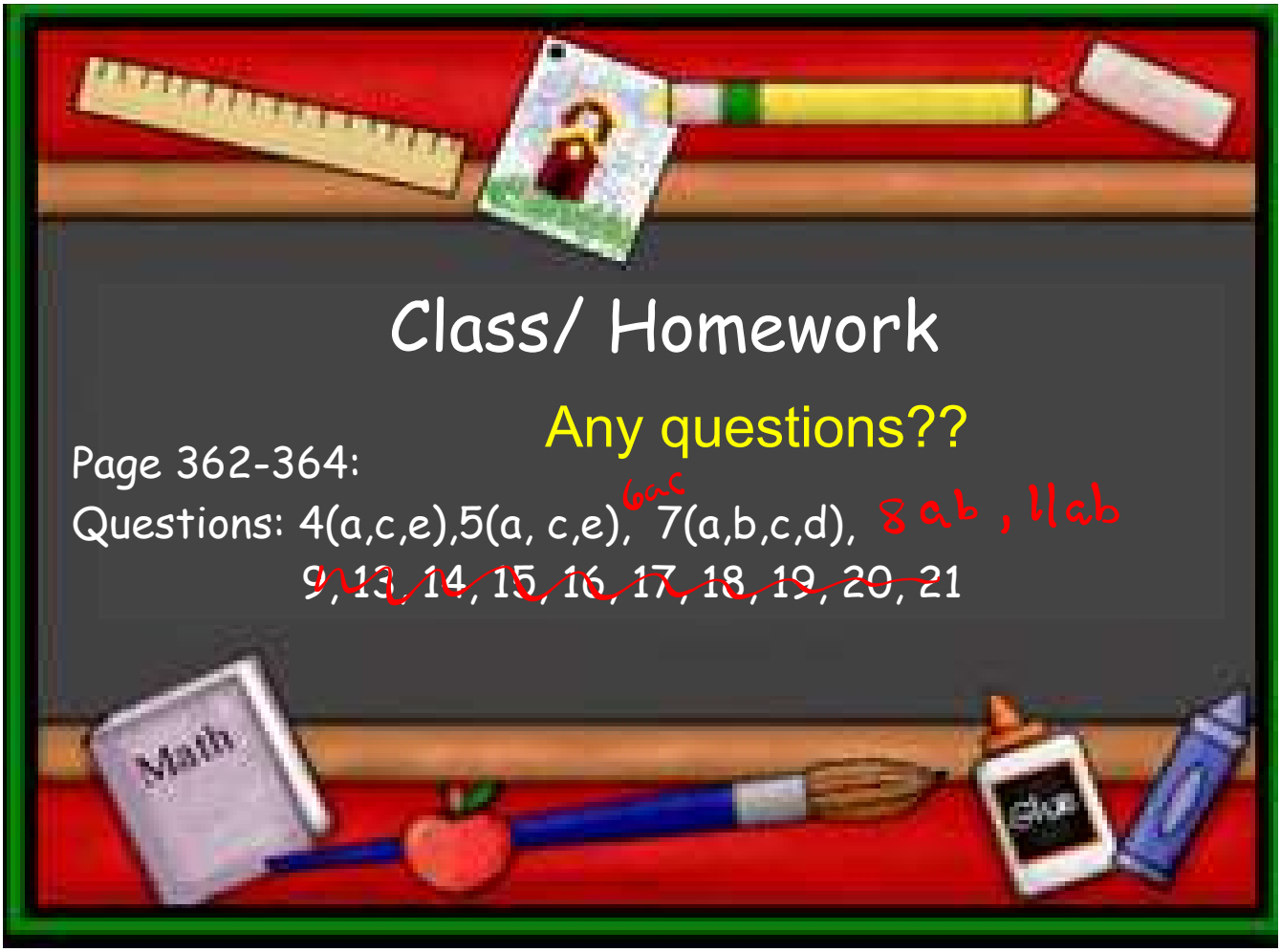
$-15 = x$

$\frac{-6}{1} = \frac{2x}{5}$

$(1)(2x) = (-6)(5)$

$\frac{2x}{2} = \frac{-30}{2}$

$x = -15$


Class/ Homework
Any questions??
Page 362-364:
Questions: 4(a,c,e),5(a, c,e), 6ac 7(a,b,c,d), 8ab, 11ab
9, 13, 14, 15, 16, 17, 18, 19, 20, 21
Math

Can you rearrange this to slope intercept form?

$y = mx + b$

a) $2y = -3x - 10$

need this gone

$\frac{2y}{2} = \frac{-3x - 10}{2}$

$y = \frac{-3}{2}x - \frac{10}{2}$

Reduce

$y = -\frac{3}{2}x - 5$

b) $3y + 4 = 2x + 5$

$3y + 4 - 4 = 2x + 5 - 4$

$3y = 2x + 1$

$\frac{3y}{3} = \frac{2x + 1}{3}$

separate terms

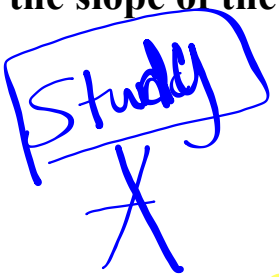
$y = \frac{2}{3}x + \frac{1}{3}$

$m = \frac{2}{3}$

$b = \frac{1}{3}$

Point - Slope Form

You can also find the equation of a line if you are given a point and the slope of the line. In order to do this you use the formula:



You need a
-Point & a Slope

slope

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

The x and y values from the given point

This equation can be rearranged to $y=mx+b$ (slope intercept)

$$m = \frac{(y_2 - y_1)}{(x_2 - x_1)}$$

$(x_2 - x_1)$

$m(x_2 - x_1) = y_2 - y_1$

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

Slope point form is a rearrangement of

$$m = \frac{y - y_1}{x - x_1}$$

$$\frac{m}{1} = \frac{(y - y_1)}{(x - x_1)}$$

$$(x - x_1) \cdot \frac{m}{1} = \frac{(y - y_1)}{(x - x_1)} \cdot (x - x_1)$$

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

Example 1:
Find the equation of a line that passes through (-3,4) and has the same slope as y = 3x + 2.

m = 3

Write what you know:

slope
m = 3

point
(-3,4)
x_1 y_1

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

$y - 4 = 3(x - -3)$

Be careful of integer rules (add opp)

$y - 4 = 3(x + 3)$

first get to

Point Slope Form

expand

$y - 4 = 3(x + 3)$

$y - 4 = 3x + 9$

$y - 4 + 4 = 3x + 9 + 4$

$y = 3x + 13$

then continue to rearrange to get to

Slope Intercept Form

Find the equation of the line in if it has a slope of -3 and it goes through the point (1,7)

m

x_1, y_1

Leave in point slope form

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

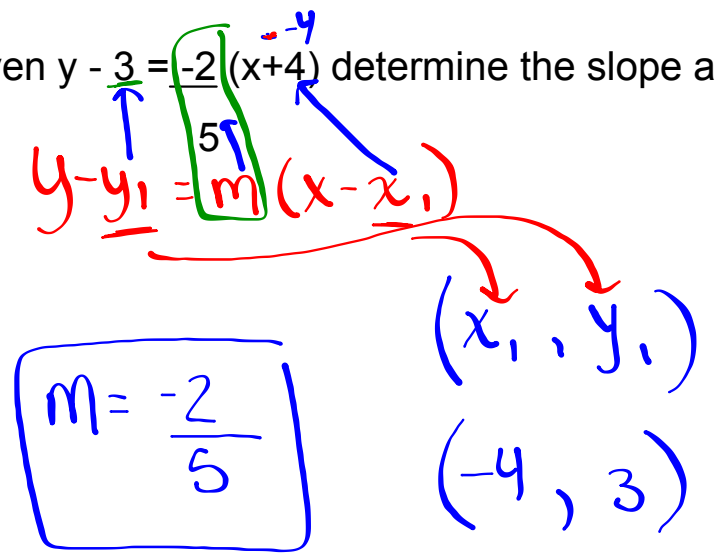
$y - 7 = -3(x - 1)$ point slope form

$y - 7 = -3x + 3$

$y - 7 + 7 = -3x + 3 + 7$

$y = -3x + 10$ Slope intercept

Given y - 3 = -2 (x+4) determine the slope and a point on the line



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

Homework

page 372-375

4(a,d), 5(a,c), 9(a,b)(i, ii),11(a,b),14, 20(a)

c) $y - 5 = -4(x - 1)$ $\quad m = -4$ $\quad (1, 5)$ $\quad x_1, y_1$

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

d) $y = 5(x - 2)$

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

$m = 5$

$(2, 0)$

5) $m = -5$ $\quad P(-4, 2)$

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

$y - 2 = -5(x - -4)$

fix

$y - 2 = -5(x + 4)$

$y - 2 = -5x - 20$

$+2 \quad +2$

$y = -5x - 18$

5) $m = \frac{-3}{4}$ $R(7, -5)$

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

$y + 5 = \frac{-3}{4}(x - 7)$

$y + 5 = \frac{-3}{4}(x - 7)$

$y + 5 = -\frac{3x}{4} + \frac{21}{4} - \frac{5}{1}$

$y = -\frac{3}{4}x + \frac{21}{4} - \frac{5 \times 4}{1 \times 4}$

Need C.D

$y = \frac{-3}{4}x + \frac{21}{4} - \frac{20}{4}$

subt

$y = \frac{-3}{4}x + \frac{1}{4}$

Attachments

Point slope form.docx