Writing equations and changing Forms

Use the graphs below to state the equation of each line (in the form requested)

A) slope intercept
y-int = 6 m = 2/3

$y = \frac{2}{3}x + 6$

B) slope intercept
y-int = 2 m = -2

y = -2x + 2

C) slope intercept
y-int = -7 m = -1/3

$y = \frac{-1}{3}x - 7$

D) pt-slope (why is this easier here?)
y-intercept = nasty m = ¼ (-1, -2)

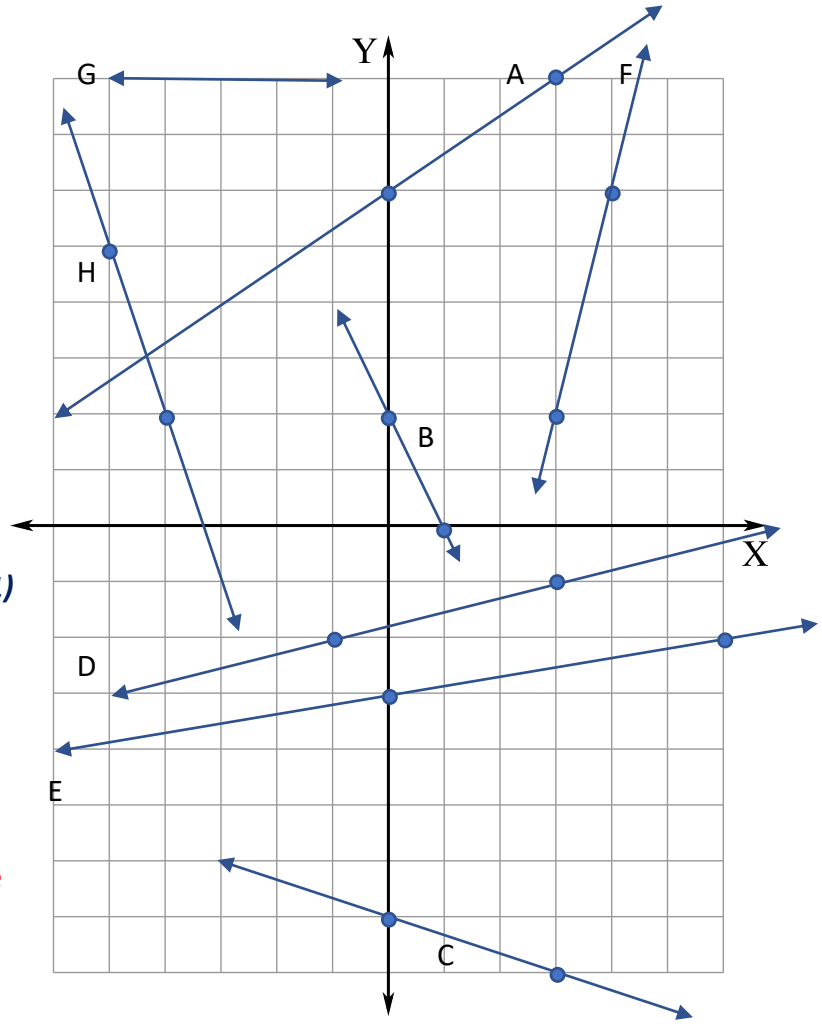
y + 2 = ¼ (x + 1)

E) your choice
y-int = -3 m = 1/6

$y = \frac{1}{6}x - 3$

F) your choice
y-intercept = ? m =4 (3, 2) pt-slope

y - 2 = 4 (x - 3)



G) ***y = 8 or (y = 0x + 8)***

H) slope intercept and point slope
Need to extend line to find b = -10 , m = -3 (-4, 2)

Y = -3x – 10 ***y – 2 = -3(x + 4)***

What is the equation of a line in point-slope form if m= ½ and the line passes thru (10, -6)

Y + 6 = ½ (x – 10)

What is the equation of a line in slope-intercept form if m= ½ and the line passes thru (10, -6)

Y = ½ x + b → -6 = ½ (10) + b -6 = 5 + b

Y = ½ x - 11

Changing to slope intercept form and Point-slope form

- *This uses your equation solving techniques that we reviewed*

Solve the following for y and state the slope and y-intercept

a) *9x – 7y = 63*

9x – 63 = 7y

$\frac{9x}{7} - \frac{63}{7} = y$ *thus:* $\frac{9x}{7} - 9 = y$

Slope: $m = \frac{9}{7}$

y-intercept: *-9*

x-intercept: *7*

Write in pt-slope form:

$y + 9 = \frac{9}{7}(x - 0)$

b) *42x – 7y = 11*

42x – 11 = 7y

$\frac{42x}{7} - \frac{11}{7} = y$ *thus:* $6x - \frac{11}{7} = y$

Slope: *m = 6*

y-intercept: $\frac{-11}{7}$

x-intercept: $\frac{11}{42}$

Write in pt-slope form:

$y + 0 = 6(x - \frac{11}{42})$

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c) *12x – 13y – 288 = 0*

12x – 288 = 13y

$\frac{12x}{13} - \frac{288}{13} = y$

Slope: $m = \frac{12}{13}$

y-intercept: $\frac{-288}{13}$

x-intercept: *24*

Write in pt-slope form:

$y + 0 = \frac{12}{13}(x - 24)$

d) $y + 11 = \frac{-2}{5}(x - 3)$

5y + 55 = -2x + 6

5y = -2x – 49 $y = \frac{-2x}{5} - \frac{49}{5}$

Slope: $m = \frac{-2}{5}$

y-intercept: $\frac{-49}{5}$

x-intercept: $\frac{-49}{2}$

Write in slope intercept form:

$y = \frac{-2x}{5} - \frac{49}{5}$

Assignment = Worksheet

Changing Forms and Equations from Graphs

According to some students, what is the true purpose of Homework?

slope	$\frac{1}{4}$	6	6	-3	$\frac{2}{7}$	$-\frac{2}{5}$	2	$\frac{1}{4}$	$\frac{2}{3}$	$\frac{3}{5}$	$\frac{2}{3}$	0	-3	$-\frac{4}{3}$	$-\frac{4}{3}$	$\frac{2}{3}$	$\frac{1}{4}$	$-\frac{7}{4}$	$\frac{5}{9}$
y-intercept	5	$-\frac{1}{2}$	-4	2	0	2	$-\frac{7}{2}$	$-\frac{7}{2}$	$\frac{1}{2}$	-1	-7	2	$\frac{1}{3}$	3	$\frac{8}{3}$	-1	1	-4	$\frac{7}{9}$

Write each of the following in slope y-intercept form and state the slope and y-intercept

L ***-2x + 3y = -21***

I ***-x + 4y = 20***

S ***6x – y = 4***

T ***12x = 2y + 1***

H ***4x – 6y + 3 = 0***

A ***3x – 5y = 5***

G ***4x + 3y = 8***

F ***x + 4 = 4y***

V ***y – 2 = 0***

N ***4x + 3y = 9***

R ***4x – 2y = 7***

N ***5x – 9y = -7***

o) ***2x + 5y = 10***

U ***-7x – 4y = 16***

I ***9x + 3y = 1***

F ***-2x + 7y = 0***

Write the equations of the lines shown on the axis (use y = mx + b except for e, f, g)

a)

b)

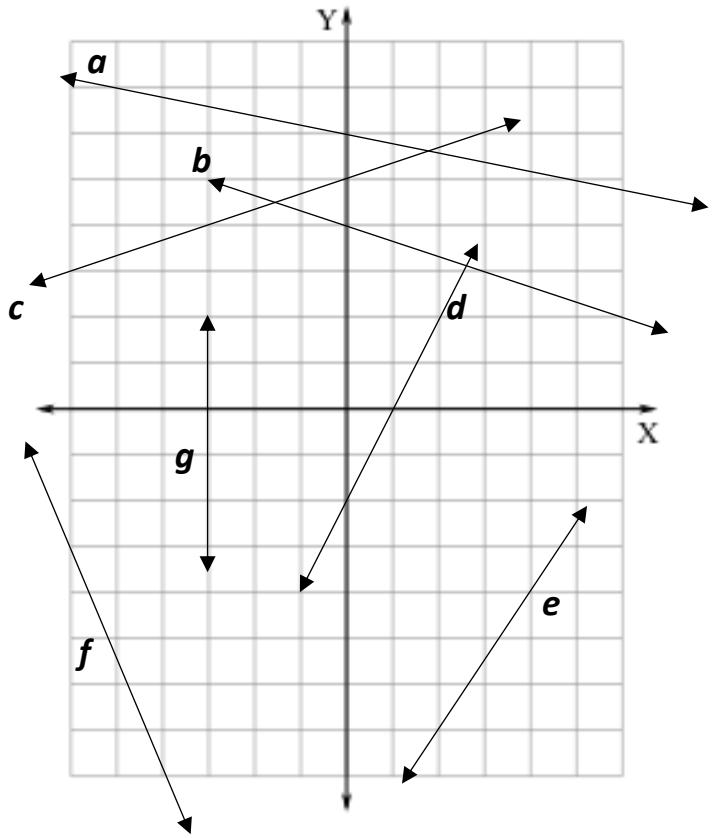
c)

d)

e)

f)

g)



Page 362 12a) ***b)***

c) ***d)***

14a) ***b)*** ***c)***

Page 385 22a) ***b)***

Page 389 #13a) ***b)*** ***c)*** ***d)***

#26a) ***b)*** ***c)***