099 §3.3 #s 1-16, 13-17, 19-41
↳ Also x-int

#s 1-6 Give the eq'n of the line with the following slope & y-intercept.

(1) $m = -4,\ b = -3 \longrightarrow$ $\boxed{y = -4x - 3}$
$y = mx + b$

(3) $m = -\frac{2}{3},\ b = 0 \longrightarrow$ $\boxed{y = -\frac{2}{3}x}$

(5) $m = -\frac{2}{3},\ b = \frac{1}{4} \longrightarrow$ $\boxed{y = -\frac{2}{3}x + \frac{1}{4}}$

#s 7-12 Find slope of a line (a) parallel and (b) perpendicular to the given line.

(7) $y = 3x - 2 \longrightarrow$
(a) $\boxed{m = 3}$ & (b) $\boxed{m_\perp = -\frac{1}{3}}$

(9) $3x + y = -2$
$y = -3x - 2$
$\boxed{\begin{array}{l}\text{(a) } m = -3 \\ \text{(b) } m_\perp = \frac{1}{3}\end{array}}$

099 § 3.3 #s 11, 13-17, 19-41
x-ints!

(11) $2x+5y=-11$

$5y=-2x-11$

$y=\frac{-2x-11}{5}=-\frac{2}{5}x-\frac{11}{5}$

(a) $m=-\frac{2}{5}$

(b) $m_{\perp}=\frac{5}{2}$

#s 13-17

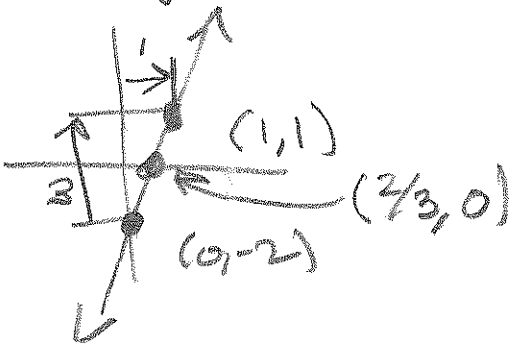
(13) Graph, using slope & y-int. Teacher Also wants the x-int.

(13) $y=3x-2 \longrightarrow m=3,\ b=-2$

$3x-2=0$

$3x=2$

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



(15) $2x-3y=12$

$-3y=-2x+12$

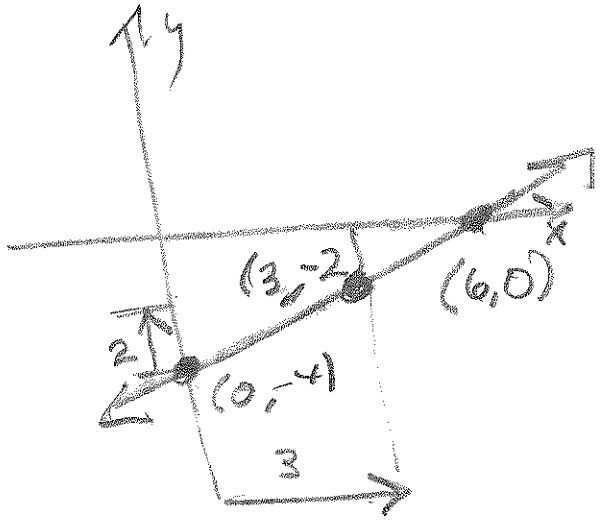
$y=\frac{-2x+12}{-3}=\frac{2}{3}x-4$

$m=\frac{2}{3}$ $b=-4$

x	y
	0

$2x=12$

$x=6$



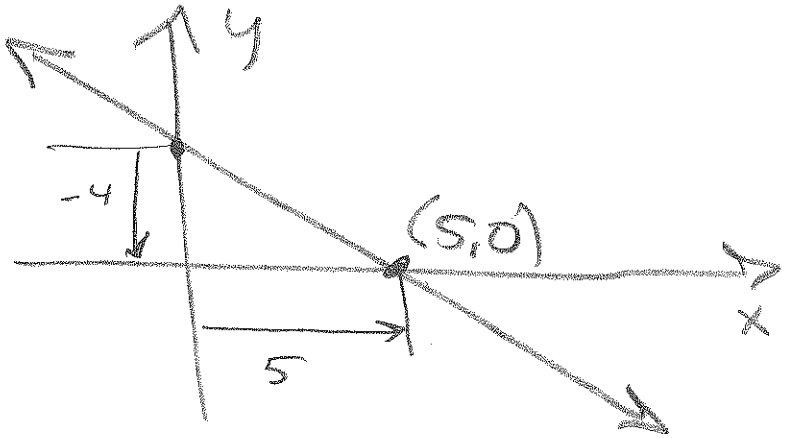
099 §3.3 #s 17-41

(17) $4x+5y=20$

$5y=-4x+20$

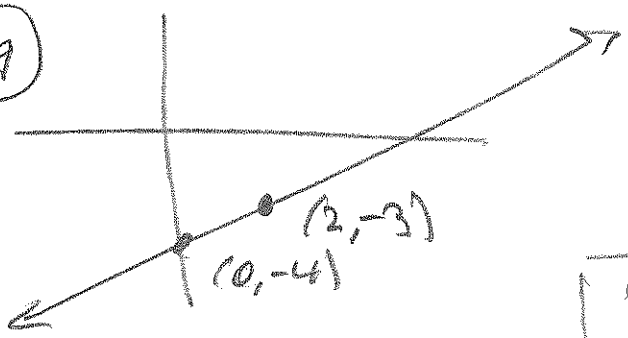
$y=-\frac{4}{5}x+4$

$m=-\frac{4}{5}$, $b=4$



#s 19-22 Find slope & y-intercept. Then write eq'n of line in slope-intercept form.

(19)

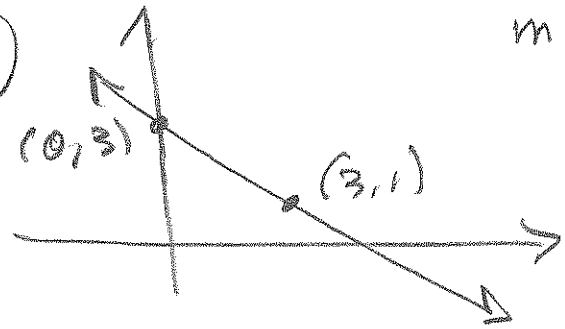


$m=\frac{y_2-y_1}{x_2-x_1}=\frac{-3-(-4)}{2-0}$

$=\frac{1}{2}=m$ & $b=-4 \Longrightarrow$

$y=\frac{1}{2}x-4$

(21)



$m=\frac{y_2-y_1}{x_2-x_1}=\frac{1-3}{3-0}=-\frac{2}{3}$

& $b=3 \Longrightarrow$

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

#s 25-32 Book wants $y=mx+b$. I generally have you stop @ $y=m(x-x_1)+y_1$ on a test. For these sorts-

Alg 1 3.2 #5 23-41

(23) $(-2,-5)$ & $m=2$

$y = m(x - x_1) + y_1$ →

$y = 2(x-(-2))-5$ → Stop here on test, unless otherwise instructed.

$= 2x + 4 - 5$

$y = 2x - 1$

(25) $(x_1, y_1) = (-4, 1)$; $m = -\frac{1}{2}$ →

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

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

$= -\frac{1}{2}x - 2 + 1$

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

(27) $(x_1, y_1) = (-\frac{1}{3}, 2)$; $m = -3$

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

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

$= -3x - 1 + 2$

$y = -3x + 1$

099 §3.2 #s 29-41

(29) $(x_1, y_1) = (-4, 2)$; $m = \frac{2}{3}$

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

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

$$= \frac{2}{3}x + \frac{8}{3} + \frac{2}{1}\cdot\frac{3}{3} = \frac{2}{3}x + \frac{8+6}{3}$$

$$y = \frac{2}{3}x + \frac{14}{3}$$

(31) $(x_1, y_1) = (-5, -2)$; $m = -\frac{1}{4}$

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

$$y = -\frac{1}{4}(x+5) - 2$$

$$= -\frac{1}{4}x - \frac{5}{4} - \frac{2}{1}\cdot\frac{4}{4} = -\frac{1}{4}x - \frac{5}{4} - \frac{8}{4}$$

$$y = -\frac{1}{4}x - \frac{13}{4}$$

#s 33-38 STANDARD TEST QUESTIONS

"Find eq'n of the line thru 2 points, in point-slope, slope-intercept and Standard Forms.

odd $3, 33, \pm 5, 33, -41$

(33) $(x_1, y_1) = (3, -2)$

$(x_2, y_2) = (-2, 1)$

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1-(-2)}{-2-3} = \frac{3}{-5}$

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

$y = -\frac{3}{5}(x-3) - 2$ Point-Slope

$= -\frac{3}{5}x + \frac{9}{5} - \frac{2}{1}\cdot\frac{5}{5} = -\frac{3}{5}x + \frac{9-10}{5}$

$y = -\frac{3}{5}x - \frac{1}{5}$ Slope-Intercept

Times 5:

$5y = -3x - 1$

$3x + 5y = -1$ Standard

(35) $(x_1, y_1) = (-2, \frac{1}{2})$, $(x_2, y_2) = (-4, \frac{1}{3})$

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\frac{1}{3} - \frac{1}{2}}{-4-(-2)} = \frac{\frac{1}{3}\cdot\frac{2}{2} - \frac{1}{2}\cdot\frac{3}{3}}{-4+2} = \frac{\frac{2-3}{6}}{-2}$

$= \frac{-\frac{1}{6}}{-2} = \frac{\frac{1}{6}}{2} = \frac{\frac{1}{6}}{\frac{2}{1}} = \frac{1}{6}\cdot\frac{1}{2} = \frac{1}{12}$

$y = \frac{1}{12}(x+2) + \frac{1}{3}$ P-S

$= \frac{1}{12}x + \frac{1}{6} + \frac{1}{3}$

$y = \frac{1}{12}x + \frac{1}{2}$ S-I

Times 12 → $12y = x + 6$

$-x + 12y = 6$ Std

099 §3.3 #s37–41

(37) $(x_1, y_1) = \left(\frac{1}{3}, -\frac{1}{5}\right)$, $(x_2, y_2) = \left(-\frac{1}{3}, -1\right)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-1 - \left(-\frac{1}{5}\right)}{-\frac{1}{3} - \frac{1}{3}} = \frac{-1 + \frac{1}{5}}{-\frac{2}{3}} = \frac{-\frac{4}{5}}{-\frac{2}{3}} = \frac{\frac{4}{5}}{\frac{2}{3}}$$

$$= \frac{4}{5} \cdot \frac{3}{2} = \frac{6}{5} = m$$

Scratch:
$\left(\frac{6}{5}\right)\left(-\frac{1}{3}\right) = -\frac{2}{5}$

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

$y = \frac{6}{5}\left(x - \frac{1}{3}\right) - \frac{1}{5}$ p-s

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

$y = \frac{6}{5}x - \frac{3}{5}$ s-i

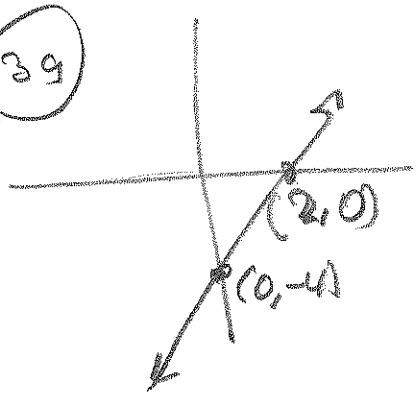
Times 5 →

$5y = 6x - 3$

$-6x + 5y = -3$ std'd

#s39, 41 Use any two pts on the line to obtain its eq'n.

(39)

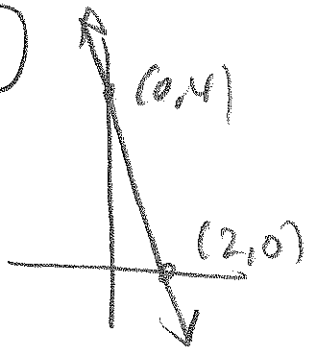


$m = \frac{-4 - 0}{0 - 2} = 2$

$y = 2x - 4$

099 §3.3 #41

(41)



$m = \frac{4-0}{0-2} = -2$

$y = -2x + 4$

39 & 41 were easy because y-int. was handed to us.