

7.2 p. 493

p. 490 slope intercept form $y = mx + b$
 ↑ slope ↑ y-intercept

point slope form $y - y_1 = m(x - x_1)$
 ↑ slope $m = \frac{y - y_1}{x - x_1}$

standard form $Ax + By = C$
 A & B are not both 0
 at the same time
 $A \geq 0$
 A & B are integers
 (not fractions)

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ex 16 write in slope intercept form...

$$m = 2, b = 12$$

$$y = mx + b$$

$$y = 2x + 12$$

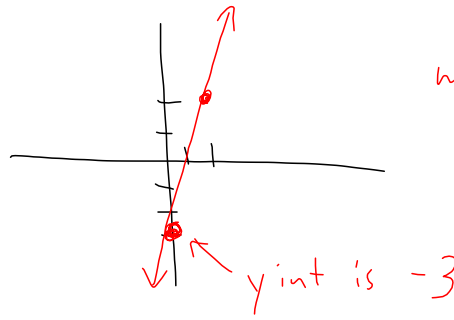
ex 20 slope = -1 y-intercept (0, -3)

$$y = -1x + (-3)$$

$$y = -x - 3$$

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ex 24



$$m = \frac{5}{2} \quad \text{or} \quad m = \frac{-3 - 2}{0 - 2}$$

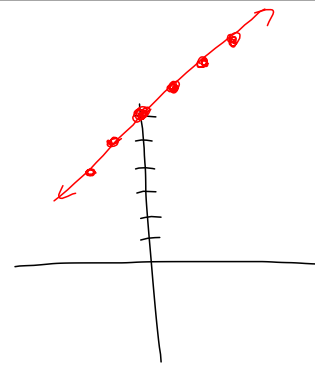
$$y = \frac{5}{2}x - 3$$

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ex 32

$$\begin{array}{r} -x + y = 6 \\ +x \qquad \qquad +x \end{array}$$

- a) $y = 1x + 6$
- b) slope = $1 = \frac{1}{1}$
- c) y int (0, 6)



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ex 38 $x + 3y = -9$

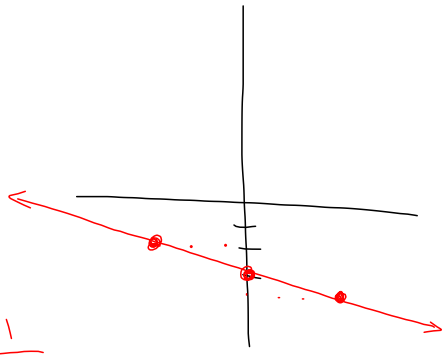
$-x$ $-x$

$\frac{3y}{3} = \frac{-x}{3} - \frac{9}{3}$

a) $y = -\frac{1}{3}x - 3$

b) slope = $-\frac{1}{3} = -\frac{1}{3} = -\frac{1}{3}$

c) y int. $(0, -3)$



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ex 40 through $(12, 10)$ & slope = 1

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

$y - 10 = 1(x - 12)$ $m = \frac{y - y_1}{x - x_1}$

$y - 10 = x - 12$ $(x - 12) | = \frac{y - 10}{x - 12} (x - 12)$

$+10$ $+10$

$y = x - 2$ $(x - 12) \cdot 1 = y - 10$

$-x$ $-x$

$-x + y = -2$

$x - y = 2$

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ex 44 (7, -2) $m = \frac{1}{4}$

$$y - (-2) = \frac{1}{4}(x - 7)$$

$$y + 2 = \frac{1}{4}(x - 7)$$

$$y + 2 = \frac{1}{4}x - \frac{7}{4}$$

$$y = \frac{1}{4}x - \frac{15}{4}$$

$$4y = 1x - 15$$

$$-1x \quad -1x$$

$$-x + 4y = -15$$

$$x - 4y = 15$$

$$\begin{array}{r} -\frac{7}{4} \quad -2 \\ -\frac{1}{4} \quad -\frac{12}{4} \\ \hline -\frac{7}{4} \quad -\frac{8}{4} = -\frac{15}{4} \end{array}$$

$$\frac{-15}{4} \cdot \frac{4}{1}$$

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ex 48 through (6, -1.2) $m = .8$

$$y - (-1.2) = .8(x - 6)$$

$$y + 1.2 = .8x - 4.8$$

$$-1.2 \quad -1.2$$

$$y = .8x - 6$$

$$-.8x \quad -.8x$$

$$-.8x + y = -6$$

$$.8x - y = 6$$

$$8x - 10y = 60$$

$$4x - 5y = 30$$

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ex 50

$(5, -2)$ $(-3, 14)$

$$m = \frac{14 - (-2)}{-3 - 5} = \frac{14 + 2}{-3 - 5} = \frac{16}{-8} = -2$$

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

$$\begin{array}{r} y + 2 = -2x + 10 \\ +2x \quad -2 \quad +2x \quad -2 \end{array}$$

$$2x + y = 8$$

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ex 56

$(\underline{13}, 5)$ $(\underline{13}, -1)$

$$x = 13$$

ex 58

$(-\frac{4}{9}, -6)$ $(\frac{12}{7}, -6)$

$$y = -6$$

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ex 62 $(-4, -2)$ $m = 0 \longleftrightarrow$

$y + 2 = 0(x + 4)$

$y + 2 = 0$

$\quad -2 \quad -2$

$y = -2$

$y = -2$

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ex 64 $(-2, 8)$ slope undef'd.

$x = -2$

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ex 72 through (4, 1) parallel to $2x + 5y = 10$

use $m = -\frac{2}{5}$

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

$$y - 1 = -\frac{2}{5}x + \frac{8}{5}$$

$$y = -\frac{2}{5}x + \frac{13}{5}$$

$5y = -2x + 13$

$$2x + 5y = 13$$

$$\frac{8}{5} + 1 = \frac{13}{5}$$

$$2x + 5y = 10$$

$$-2x \quad -2x$$

$$5y = -2x + 10$$

$$\frac{5y}{5} = \frac{-2x + 10}{5}$$

$$y = -\frac{2}{5}x + \frac{10}{5}$$

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

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ex 76 (2, -7) perp. to $5x + 2y = 18$

use $m = \frac{2}{5}$

$$y - (-7) = \frac{2}{5}(x - 2)$$

$$y + 7 = \frac{2}{5}x - \frac{4}{5}$$

$$y = \frac{2}{5}x - \frac{39}{5}$$

$5y = 2x - 39$

$$-2x + 5y = -39$$

$$2x - 5y = 39$$

$$-\frac{4}{5} - \frac{7}{1} = -\frac{39}{5}$$

$$5x + 2y = 18$$

$$-5x \quad -5x$$

$$2y = -5x + 18$$

$$\frac{2y}{2} = \frac{-5x + 18}{2}$$

$$y = -\frac{5}{2}x + \frac{18}{2}$$

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

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ex 86

$$y = 105.90x + 20$$

$$(5, \underline{549.50}) \quad y = 105.90(5) + 20$$

A H.S. student taking 5 credit hours is charged \$549.50.

$$y = 105.90(15) + 20$$

$$y = \$1608.50$$

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ex 90

$$y = 110x + 135$$

$$(5, \underline{\$685}) \quad y = 110(5) + 135$$

$$y = 685$$

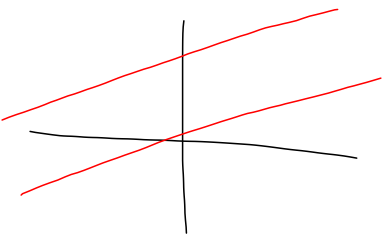
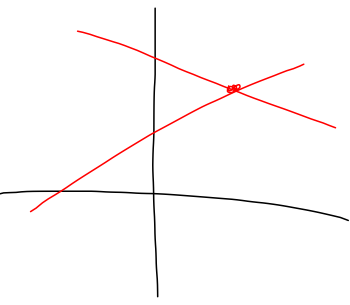
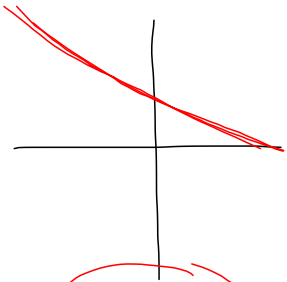
Over 5 mos. one would pay \$685 for this plan.

$$y = 110(24) + 135$$

$$y = 2775$$

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7.3 p. 503

<p>parallel</p> 	<p>intersect</p> 	<p>coincide</p> 
<p>no point in common no solution</p>	<p>1 ordered pair in common (<u> </u>, <u> </u>)</p>	<p>infinite # of solutions</p>
<p>independent & inconsistent</p>	<p>independent & consistent</p>	<p><u>equation</u> dependent & consistent</p>

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ex 14

$(4, 3)$
 ↑
 not a solution

$x + 2y = 10$
 $3x + 5y = 3$

$4 + 2(3) \stackrel{?}{=} 10$ ✓
 $3(4) + 5(3) \stackrel{?}{=} 3$ ☹️

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ex 24 $x - y = 3$

x	y
0	-3
3	0

$x + y = -1$

x	y
0	-1
-1	0

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ex 32 $2x - y = 4$

x	y
0	-4
2	0

$4x - 2y = 8$

x	y
0	-4
2	0

infinite # of solns.

$\{(x, y) \mid 2x - y = 4\}$

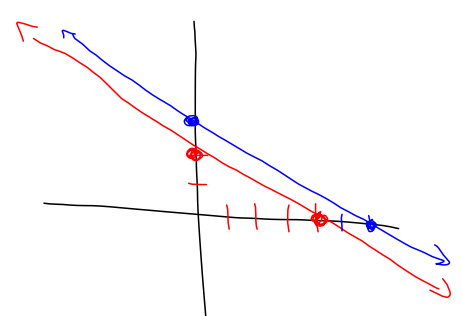
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ex36 $x + 2y = 4$

x	y
0	2
4	0

$2x + 4y = 12$

x	y
0	3
6	0



no solution

\emptyset
 $\{ \}$