

1. Solve for a . $A = \frac{1}{2}(a+b)h$

$$\frac{2A}{h} = a + b \quad \text{OR}$$

$$\boxed{\frac{2A}{h} - b = a}$$

$$\frac{2A}{h} - b = a$$

$$A = \frac{1}{2}ah + \frac{1}{2}bh$$

$$A - \frac{1}{2}bh = \frac{1}{2}ah$$

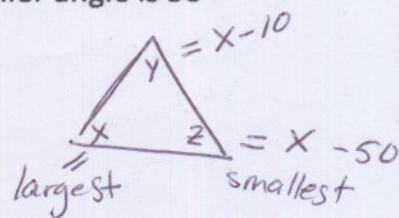
$$\boxed{\frac{2(A - \frac{1}{2}bh)}{h} = a}$$

$$\frac{2A}{h} - b = a$$

2. In a triangle the two larger angles differ by 10 degrees. The smaller angle is 50 degrees less than the largest angle.

a.) Write an equation where x represents the largest angle.

largest second largest smallest
 $x + x - 10 + x - 50 = 180$



$$x + y + z = 180^\circ$$

b.) Solve to find the three angles.

$$\begin{array}{r} 3x - 60 = 180 \\ +60 \quad +60 \\ \hline 3x = 240 \\ \frac{3x}{3} = \frac{240}{3} \end{array}$$

$$\begin{aligned} x &= 80 \\ y &= x - 10 = 70 \\ z &= x - 50 = 30 \end{aligned}$$

3. Solve $0.4(2x - 5) \leq 1.1x + 2$

$$\begin{array}{r} 0.8x - 2 \leq 1.1x + 2 \\ -1.1x + 2 \quad -1.1x + 2 \\ \hline -0.3x \leq 4 \\ \frac{-0.3x}{-0.3} \geq \frac{4}{-0.3} \end{array}$$

$$\Rightarrow x \geq -13.\bar{3}$$

$$\begin{array}{r} 13.\bar{3}3 \\ 3 \overline{)400} \\ \underline{-3} \\ 10 \\ \underline{-9} \\ 10 \end{array}$$

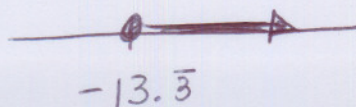
a.) Write your solution as an inequality.

$$\boxed{x \geq -13.\bar{3}}$$

b.) Write your solution as an interval.

$$[-13.\bar{3}, \infty)$$

c.) Write your solution as a line graph.



$$\frac{2000}{2000}$$

$$\begin{array}{r} 1980 \\ \times .11 \\ \hline 1980 \\ 19800 \\ \hline 217.80 \end{array}$$

3. Because of medical advances and improved health care, people in the US can expect to live longer. From 1980 to 2005, the number of years Y that a 65-year-old man could expect to live beyond age 65 (years remaining), can be approximated by

$Y = 0.11(x - 1980) + 14.1$, where x represents the year. Determine the years when a

65-year-old man could expect to live an additional 16.3 years or more.

additional life → year → y value

$$y = 16.3 \Rightarrow 0.11(x - 1980) + 14.1 \geq 16.3$$

$$0.11x - 217.80 + 14.1 \geq 16.3$$

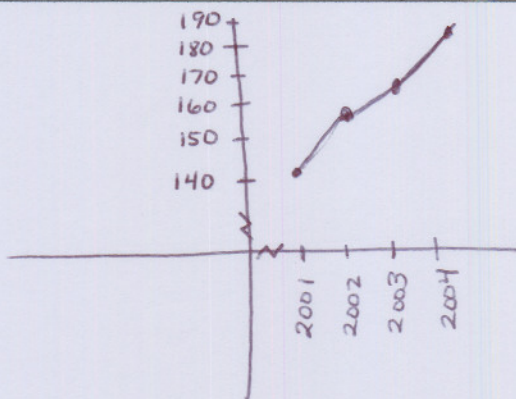
$$0.11x - 203.70 \geq 16.3$$

$$\frac{0.11x}{0.11} \geq \frac{220}{0.11}$$

$$x \geq 2000$$

4. The table contains real data of the number of US internet users y in millions during year x . Make a line graph of the data. Be sure to label the axes with appropriate scale.

x	2001	2002	2003	2004
y	143	158	162	189



5. Find three ordered pairs to the equation $y = -3x + 5$.

x	y
0	$-3(0) + 5 = 5$
1	$-3(1) + 5 = 2$
2	$-3(2) + 5 = -1$

$$(0, 5)$$

$$(1, 2)$$

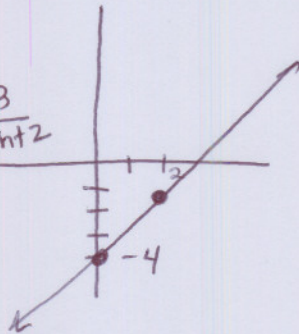
$$(2, -1)$$

many answers possible.

6. Graph $y = \frac{3}{2}x - 4$. Be sure to label the axes with appropriate scale.

y-int $(0, -4)$

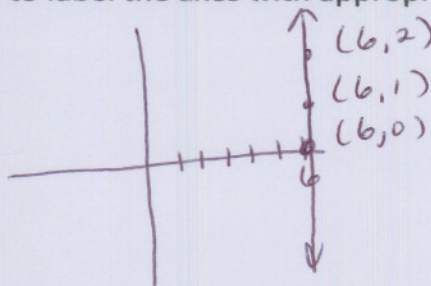
$$m = \frac{3}{2} = \frac{\text{rise}}{\text{run}} = \frac{\text{up } 3}{\text{right } 2}$$



OR

x	y
0	$\frac{3}{2}(0) - 4 = -4$
2	$\frac{3}{2}(2) - 4 = 3 - 4 = -1$

7. Graph $x = 6$. Be sure to label the axes with appropriate scale.



8. Given the equation $\frac{1}{8}x - \frac{2}{3}y = 1$.

a.) Find the coordinates of the x-intercept. let $y = 0$

$$\frac{1}{8}x - \frac{2}{3}(0) = 1$$

$$\frac{1}{8}x = 1$$

$$x = 8$$

$(8, 0)$

b.) Find the coordinates of the y-intercept. let $x = 0$

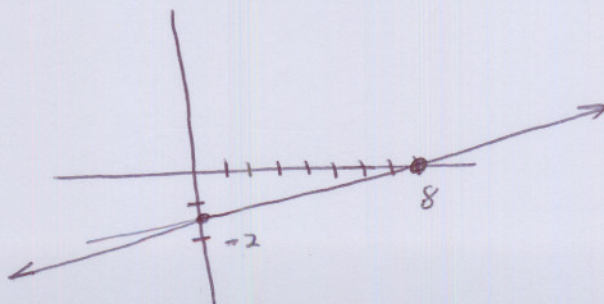
$$\frac{1}{8}(0) - \frac{2}{3}(y) = 1$$

$$-\frac{2}{3}y = 1$$

$$y = -3/2$$

$(0, -3/2)$

c.) Sketch a graph of the equation. Be sure to label the axes with appropriate scale.



9. Find the slope of the line that passes through the points $(\frac{1}{2}, \frac{2}{3})$ and $(-2, 0)$.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0 - \frac{2}{3}}{-2 - \frac{1}{2}} = \frac{-\frac{2}{3}}{-\frac{2 \cdot 2}{1 \cdot 2} - \frac{1}{2}} = \frac{-\frac{2}{3}}{-\frac{4}{2} - \frac{1}{2}} = \frac{-\frac{2}{3}}{-\frac{5}{2}} = -\frac{2}{3} \cdot -\frac{2}{5} = \frac{4}{15}$$

10. Find the slope of the line $y = -4x - 3$.

$$y = mx + b$$

$$m = -4$$

11. Given $x = 5y - 7$.

a.) Write the equation in $y = mx + b$ form.

$$x = 5y - 7$$

$$\frac{x+7}{5} = \frac{5y}{5}$$

b.) Find the coordinates of the y-intercept.

$$(0, \frac{7}{5}) \text{ or } (0, 1.4)$$

$$\frac{1}{5}x + \frac{7}{5} = y$$

$$mx + b = y$$

c.) Find the slope.

$$m = \frac{1}{5}$$

d.) Sketch a graph. Be sure to label the axes with appropriate scale.

