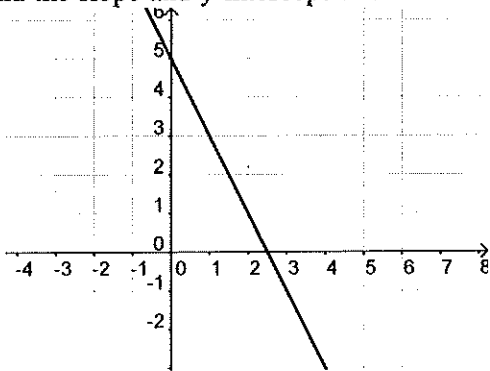


Practice

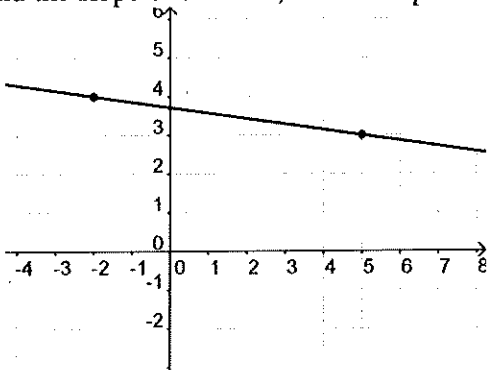
Equations of Lines: Forms of Equations of Lines

Answer these problems, then check your answers using the key on the next page. If you missed something, look at the solutions after the answer key, and if you still don't understand, watch the review video again.

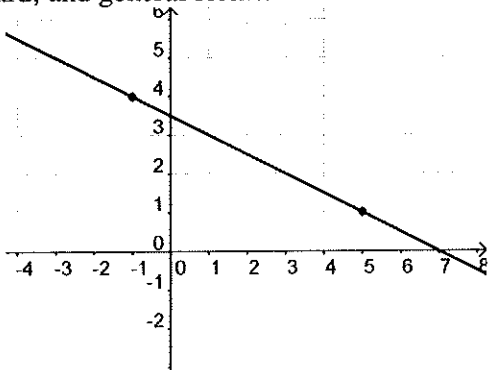
#1) Find the slope and y-intercept of this line and write an equation in slope-intercept form:



#2) Find the slope of this line, and use a point on the line to write a point-slope equation of the line:



#3) Write a point-slope form equation for this line. Then convert the equation to slope-intercept, standard, and general forms.



#4) Convert this equation $2x + 3y = 24$ to...

...general form

...slope-intercept form

#5) Convert this equation $(y - 2) = 3(x + 4)$ to...

...slope-intercept form

...standard form

...general form

#6) Convert this equation $(y + 1) = -\frac{4}{5}(x - 3)$ to...

...slope-intercept form

...standard form

...general form

Answers:

#1) *slope* = -2

y-intercept : $(0, 5)$

slope-intercept form : $y = -2x + 5$

#2) *slope* = $-\frac{1}{7}$

point-slope form : $(y-4) = -\frac{1}{7}(x+2)$ or $(y-3) = -\frac{1}{7}(x-5)$

#3) *point-slope form* : $(y-1) = -\frac{1}{2}(x-5)$ {used point $(5,1)$ }

slope-intercept form : $y = -\frac{1}{2}x + \frac{7}{2}$

standard form : $x + 2y = 7$

general form : $x + 2y - 7 = 0$

#4) *general form* : $2x + 3y - 24 = 0$

slope-intercept form : $y = -\frac{2}{3}x + 8$

#5) *slope-intercept form* : $y = 3x + 14$

standard form : $3x - y = -14$

general form : $3x - y + 14 = 0$

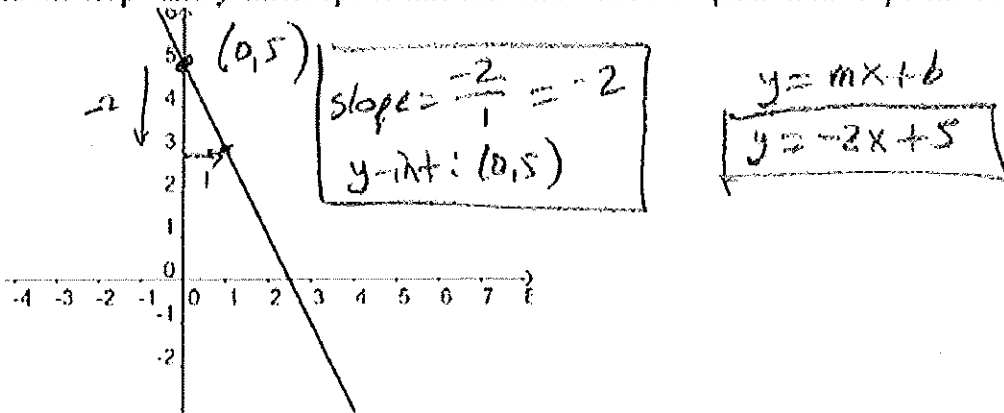
#6) *slope-intercept form* : $y = -\frac{4}{5}x + \frac{7}{5}$

standard form : $4x + 5y = 7$

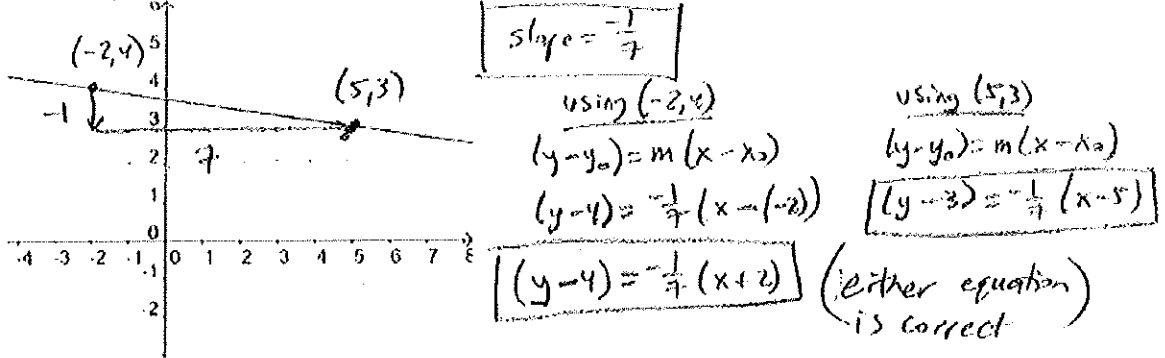
general form : $4x + 5y - 7 = 0$

Solutions:

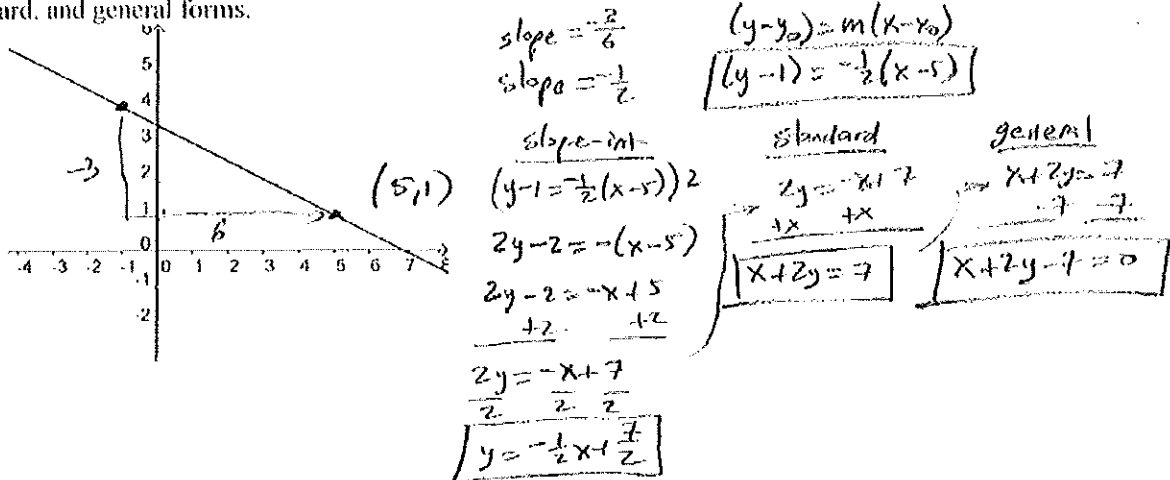
#1) Find the slope and y-intercept of this line and write an equation in slope-intercept form:



#2) Find the slope of this line, and use a point on the line to write a point-slope equation of the line:



#3) Write a point-slope form equation for this line. Then convert the equation to slope-intercept, standard, and general forms.



#4) Convert this equation $2x + 3y = 24$ to...

...general form

$$2x + 3y = 24$$

$$\begin{array}{r} -2x \quad -24 \\ \hline 2x + 3y - 24 = 0 \end{array}$$

$$\boxed{2x + 3y - 24 = 0}$$

...slope-intercept form

$$2x + 3y = 24$$

$$\begin{array}{r} -2x \quad -2x \\ \hline 3y = -2x + 24 \end{array}$$

$$\frac{3y}{3} = \frac{-2x + 24}{3}$$

$$\boxed{y = -\frac{2}{3}x + 8}$$

#5) Convert this equation $(y - 2) = 3(x + 4)$ to...

...slope-intercept form

$$(y - 2) = 3(x + 4)$$

$$y - 2 = 3x + 12$$

$$\begin{array}{r} +2 \quad +2 \\ \hline y = 3x + 14 \end{array}$$

$$\boxed{y = 3x + 14}$$

...standard form

$$(y - 2) = 3(x + 4)$$

$$y - 2 = 3x + 12$$

$$\begin{array}{r} +2 \quad +2 \\ \hline y = 3x + 14 \end{array}$$

$$\begin{array}{r} -3x \quad -3x \\ \hline y = 3x + 14 \end{array}$$

$$(-3x - y = 14) \cdot (-1)$$

$$\boxed{3x - y = -14}$$

must be a positive integer

...general form

$$3x - y = -14$$

$$\begin{array}{r} +14 \quad +14 \\ \hline 3x - y + 14 = 0 \end{array}$$

$$\boxed{3x - y + 14 = 0}$$

#6) Convert this equation $(y + 1) = -\frac{4}{5}(x - 3)$ to...

...slope-intercept form

$$\left((y + 1) = -\frac{4}{5}(x - 3) \right) \cdot 5 \quad \begin{array}{l} \text{multiply by} \\ 5 \text{ to clear} \\ \text{fraction} \end{array}$$

$$5(y + 1) = -4(x - 3)$$

$$5y + 5 = -4x + 12$$

$$\begin{array}{r} -5 \quad -5 \\ \hline 5y = -4x + 7 \end{array}$$

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

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

...standard form

$$5y = -4x + 7$$

$$\begin{array}{r} +4x \quad +4x \\ \hline 4x + 5y = 7 \end{array}$$

$$\boxed{4x + 5y = 7}$$

...general form

$$4x + 5y = 7$$

$$\begin{array}{r} -7 \quad -7 \\ \hline 4x + 5y - 7 = 0 \end{array}$$

$$\boxed{4x + 5y - 7 = 0}$$