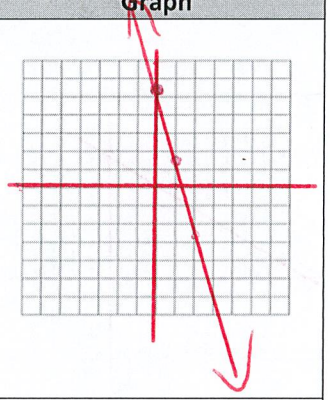
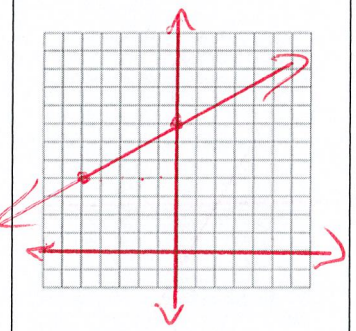
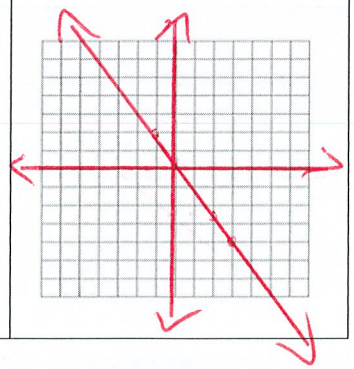
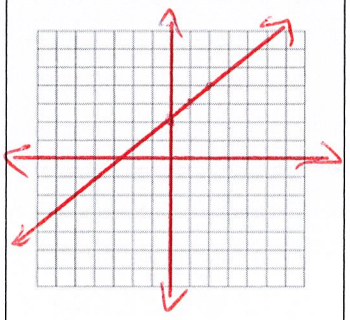
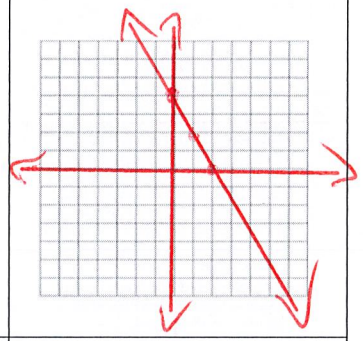
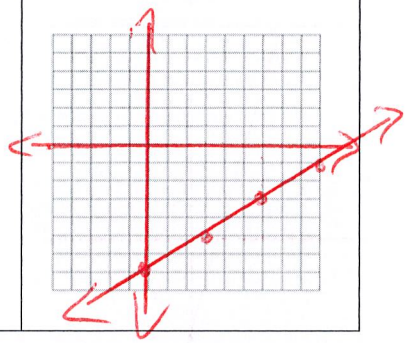
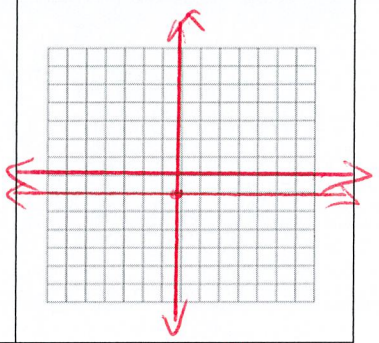
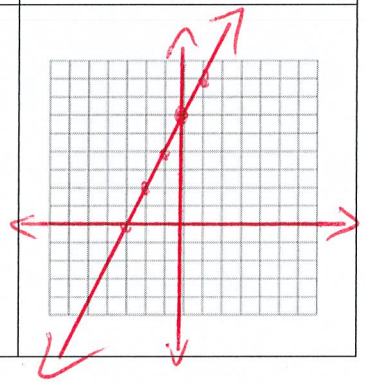
INTEGRATED MATH 1
MODULE 6.1-6.3

NAME KEY

For each problem given in the first column, write the equation in each of the forms specified and sketch the graph.

	Slope Intercept Form	Point Slope Form	Standard Form	Graph
1. (2,3) and (4, −5) $\frac{-5-3}{4-2} = \frac{-8}{2} = -4$	$3 = -4(2) + b$ $3 = -8 + b$ $+8 \quad +8$ $11 = b$ $y = -4x + 11$	$y - 3 = -4(x-2)$ $y + 5 = -4(x-4)$	$4x + y = 11$	
2. $m = \frac{3}{5}$, (5, 10)	$10 = \frac{3}{5}(5) + b$ $-3 \quad -3$ $7 = b$ $y = \frac{3}{5}x + 7$	$y - 10 = \frac{3}{5}(x-5)$	$-\frac{3}{5}x + y = 7$ $-3x + 5y = 35$ $3x - 5y = -35$	
3. (−1, 2) and (3, −4) $\frac{-4-2}{3-(-1)} = \frac{-6}{4} = -\frac{3}{2}$	$2 = -\frac{3}{2}(-1) + b$ $2 = \frac{3}{2} + b$ $\frac{1}{2} = b$ $y = -\frac{3}{2}x + \frac{1}{2}$	$y - 2 = -\frac{3}{2}(x+1)$ $y + 4 = -\frac{3}{2}(x-3)$	$\frac{3}{2}x + y = \frac{1}{2}$ $3x + 2y = 1$	

	Slope Intercept Form	Point Slope Form	Standard Form	Graph
4. y-intercept $b = 2$ (3,5)	$5 = m(3) + 2$ $5 = 3m + 2$ $-2 \quad -2$ $3 = 3m$ $1 = m$ $y = x + 2$	$y - 5 = (x - 3)$	$-x + y = 2$	
5. y-intercept 4 (0,4) x-intercept -2 (2,0) $\frac{4-0}{0-2} = \frac{4}{-2}$ $m = -2$	$y = -2x + 4$	$y - 4 = -2(x - 0)$ $y - 0 = -2(x - 2)$	$2x + y = 4$	
6. $m = \frac{2}{3}$, $(6, -3)$	$-3 = \frac{2}{3}(6) + b$ $-3 = 4 + b$ $-4 \quad -4$ $-7 = b$ $y = \frac{2}{3}x - 7$	$y + 3 = \frac{2}{3}(x - 6)$	$-\frac{2}{3}x + y = -7$	

	Slope Intercept Form	Point Slope Form	Standard Form	Graph
7. $(5,-1)$ and $(-2,-1)$ $m = \frac{-1+(+1)}{-2-5} = \frac{0}{-7}$	$-1 = 0(-2)+b$ $y = 0x - 1$ $y = -1$	$y+1 = 0(x-5)$ $y+1 = 0(x+2)$	$y = -1$	
8. x-intercept -3 $(-3,0)$ y-intercept 6 $(0,6)$ $m = \frac{6-0}{0-(+3)} = \frac{6}{-3} = -2$ b	$y = 2x+6$	$y-0 = 2(x+3)$ -or- $y-6 = 2(x-0)$	$-2x+y=6$ $2x-y=-6$	

$m = -2000$

9. An airplane 30,000 feet above the ground begins descending at the rate of 2000 feet per minute. Assume the plane continues at the same rate of descent. The plane's height and minutes above the ground are related to each other.

   a. Write the equation of the line that models the situation. $y = -2000x + 30{,}000$

   b. Use the equation in part a to determine the height of the airplane after 5 minutes.

$-2000(5) + 30{,}000$

$-10{,}000 + 30{,}000$

20,000 ft.

10. Suppose you receive \$100 for a graduation present, and you deposit it in a savings account. Then each week thereafter, you add \$5 to the account but no interest is earned. The amount in the account is a function of the number of weeks that have passed. $m = 5$

   a. Write the equation of the line that models the situation. $y = 5x + 100$

   b. Use the equation in part a to determine when you will have \$310 in the bank.

$310 = 5x + 100$

$210 = 5x$

$42 = x$

$5\overline{)210}$ 42, 20, 10

42 weeks