Algebra 1 Name Answer Key ID: 1

Review/Refresh

$m = \frac{y_2 - y_1}{x_2 - x_1}$

Date _____ Period ____

Solve each equation for the indicated variable.

1) $xm = n - p$, for x

$x = \frac{n-p}{m}$

2) $\frac{x}{k} = \frac{w}{v}$, for x

$k \cdot \frac{x}{k} = \frac{w}{v} \cdot k$

$x = \frac{kw}{v}$

$x = \frac{wk}{v}$

Find the slope of the line through each pair of points.

3) $(-12, 16), (7, 11)$ $m = \frac{11-16}{7+12}$

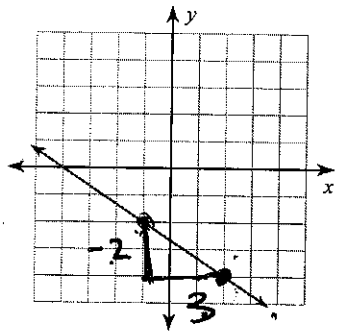
$m = -\frac{5}{19}$

4) $(16, -3), (17, 14)$ $m = \frac{14+3}{17-16}$

$m = 17$

Find the slope of each line.

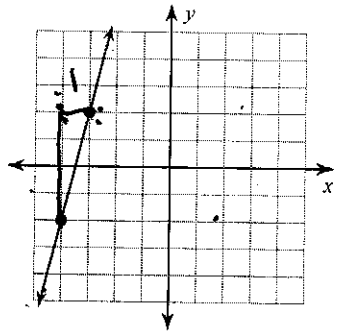
5)



$m = \frac{\text{Rise } y}{\text{Run } x}$

$-\frac{2}{3}$

6)



4

Vux Itay

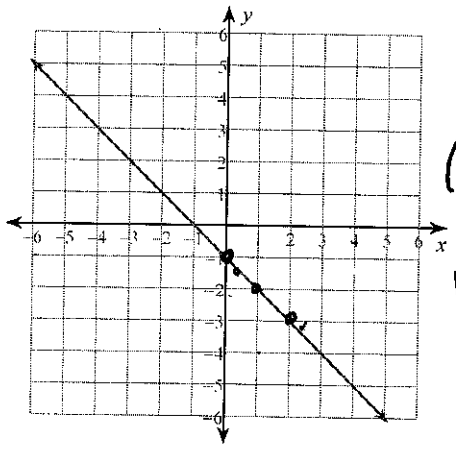
$x = 2$

$y = 2$

Sketch the graph of each line.

$y = mx + b$

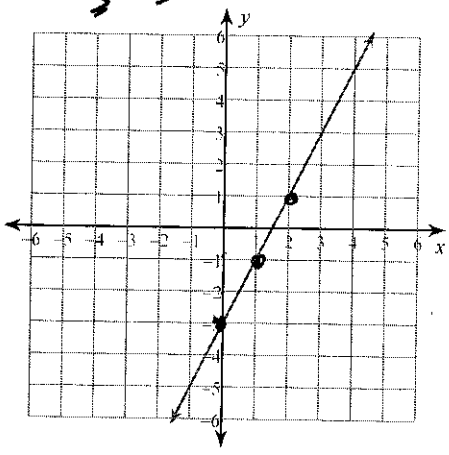
7) $y = -x - 1$



$(0, -1)$

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

8) $y = 2x - 3$



$m = \frac{2}{1}$

Solve each system by elimination.

9) $-3x - 7y = -4$
$4x + 7y = 3$

$(-1, 1)$

$4(-1) + 7y = 3$

$-3x - 7y = -4$
$4x + 7y = 3$

$x = -1$

Plug in

10) $(7x + 3y = -16) \cdot -5$
$(5x + 5y = -20) \cdot 3$

$(-1, -3)$

$-35x - 15y = 80$
$15x + 15y = -60$

$-20x = 20$

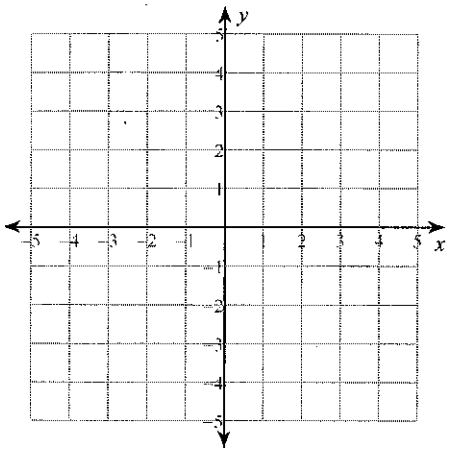
$x = -1$

Plug in

Solve each system by graphing.

11) $y = -\frac{7}{3}x + 4$

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



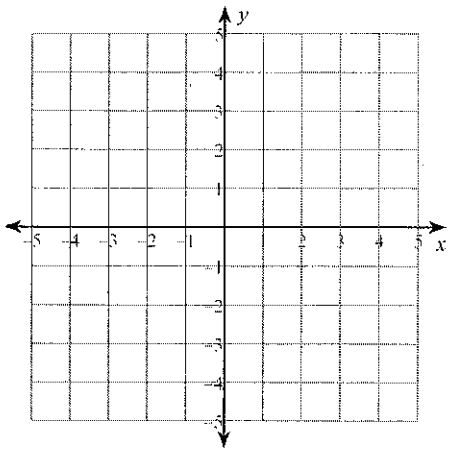
(3, -3)

12) $y = \frac{1}{4}x + 3$

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

same slope

no solution



1. define variables

13) The senior classes at High School A and High School B planned separate trips to Yellowstone National Park. The senior class at High School A rented and filled 7 vans and 4 buses with 181 students. High School B rented and filled 14 vans and 5 buses with 284 students. Every van had the same number of students in it as did the buses. How many students can a van carry? How many students can a bus carry?

x: vans
y: buses

A: $2(7x + 4y = 181)$

B: $14x + 5y = 284$

$-14x - 8y = -362$

$+ 14x + 5y = 284$

$-3y = -78$

$y = 26$ buses

$x = 11$ vans

$14x + 5(26) = 284$

$x = 11$

14) A plane traveled 480 miles to Lisbon and back. The trip there was with the wind. It took 6 hours. The trip back was into the wind. The trip back took 12 hours. Find the speed of the plane in still air and the speed of the wind.

15) The school that Dan goes to is selling tickets to a spring musical. On the first day of ticket sales the school sold 4 senior citizen tickets and 7 child tickets for a total of \$101. The school took in \$163 on the second day by selling 5 senior citizen tickets and 14 child tickets. Find the price of a senior citizen ticket and the price of a child ticket.

x: sen. cit
y: child tick

$-2(4x + 7y = 101)$

$5x + 14y = 163$ $\Rightarrow$

$-8x - 14y = -202$

$5x + 14y = 163$

$-3x = -39$

$x = 13$; $y = 7$

16) The senior classes at High School A and High School B planned separate trips to the county fair. The senior class at High School A rented and filled 11 vans and 10 buses with 373 students. High School B rented and filled 14 vans and 2 buses with 228 students. Every van had the same number of students in it as did the buses. Find the number of students in each van and in each bus.

x vans
y buses

$11x + 10y = 373$

$-5(14x + 2y = 228)$

$11x + 10y = 373$

$-70x - 10y = -1140$

$-59x = -767$

$x = 13$

$y = 23$