The Slope of a line

Positive Slopes go up from left to right 

Negative Slopes go down from left to right 

Horizontal Lines have a slope of zero 

Vertical Lines have an undefined slope (or no slope) 

Slope is always notated by the lower case "m"

Slope = $\frac{\text{change in y}}{\text{change in x}} = \frac{\text{vertical change}}{\text{horizontal change}} = \frac{\text{rise}}{\text{run}}$

Slope Formula

To find a slope given two ordered pairs (x_1,y_1), (x_2,y_2), use the slope formula:

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

Find the slope given two points:

(x_1,y_1) (x_2,y_2)

1) (9, 5) (4, 8)

$m = \frac{8 - 5}{4 - 9} = \frac{3}{-5}$

2) (6 , -3) (4, - 5)

$m = \frac{-5 - -3}{4 - 6} = \frac{-5 + 3}{4 - 6} = \frac{-2}{-2} = 1$

Try These:

1) (4, 3) (7, 2)

2) (-6, 10) (-4, 8)

3) (-7, 2) (-7, 4)

Name the type of slope each line below has:

1) 

2) 

3) 

4) 

_____ _____ _____ _____

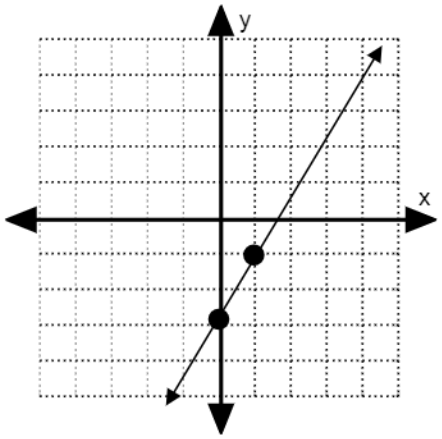
Rally Coach

Find the slope given two points:
Partner A: _____ Partner B: _____

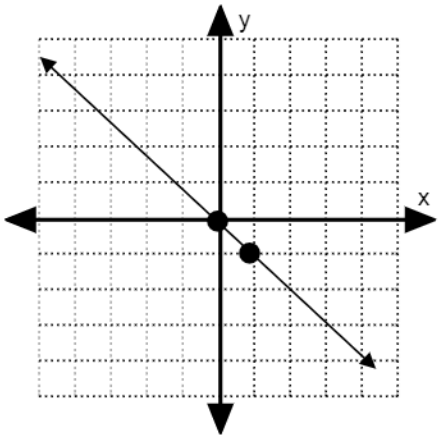
1. (2, 3) (9, 7) m = _____	2. (3, 4) (4, 6) m = _____
3. (2, 6) (-1, 3) m = _____	4. (-3, -4) (5, 1) m = _____
5. (5, 7) (-2, -3) m = _____	6. (-2, 3) (8,3) m = _____
7. (-2, 3) (3, -3) m = _____	8 (-2, -8) (1, 4) m = _____

Slopes from Graphs

a) Choose two points on the line
b) Find the Rise: count from the lower point up to where the upper point is
c) Find the Run: count right or left to the second point
- Right is a positive run
- Left is a negative run

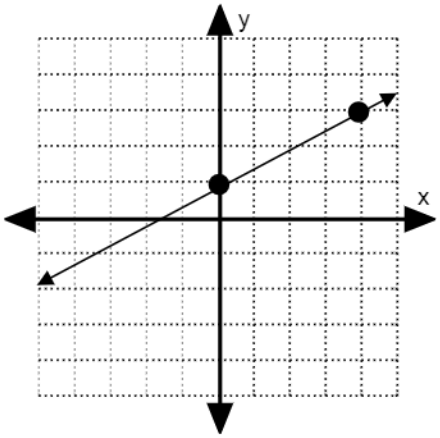


$m = \frac{2}{1} = 2$

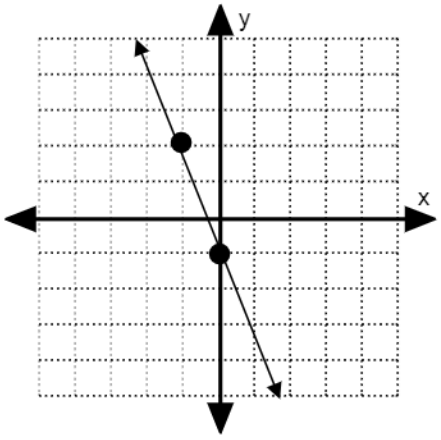


$m = \frac{1}{-1} = -1$

Try These:



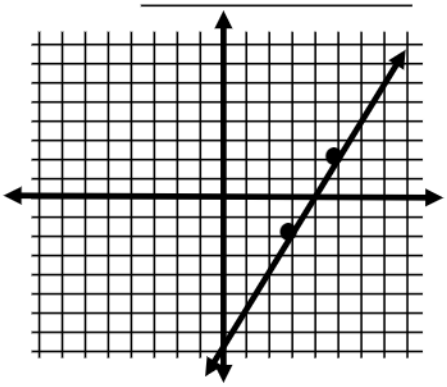
m =



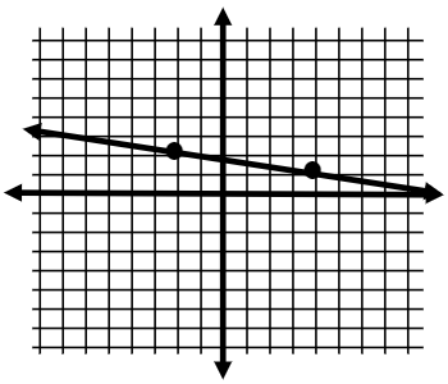
m =

Determine the slope of each line.(Reduce if possible)

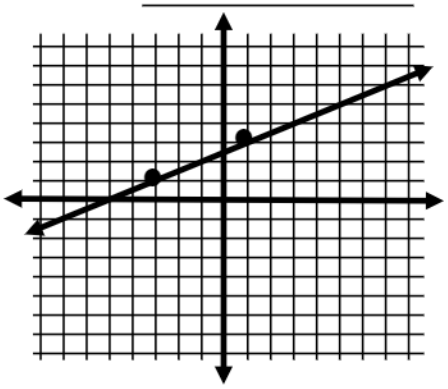
1. _____



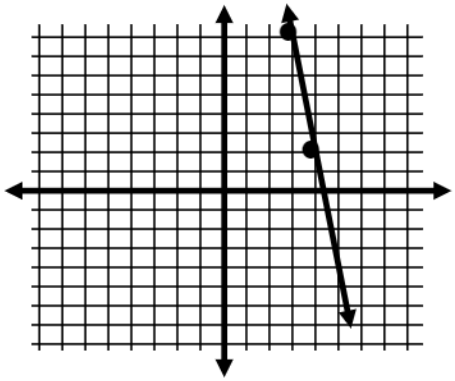
2. _____



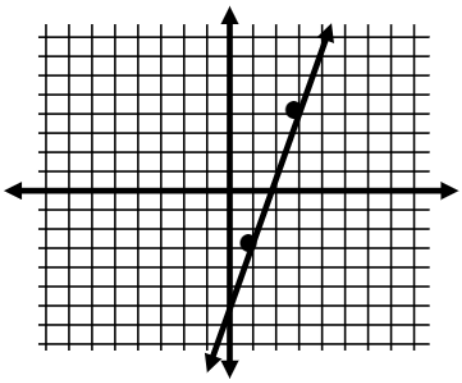
3. _____



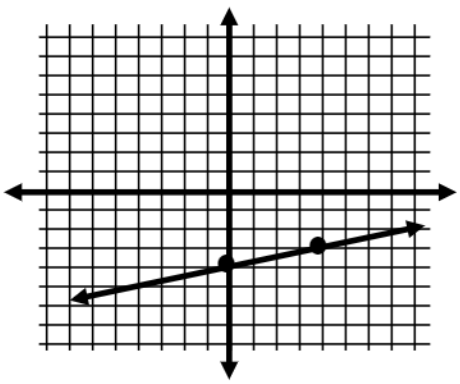
4. _____



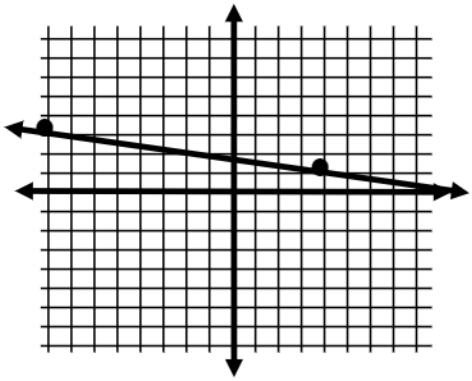
5. _____



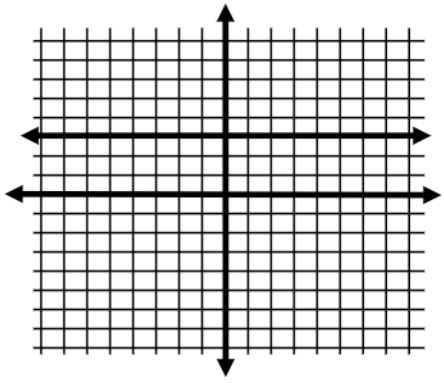
6. _____



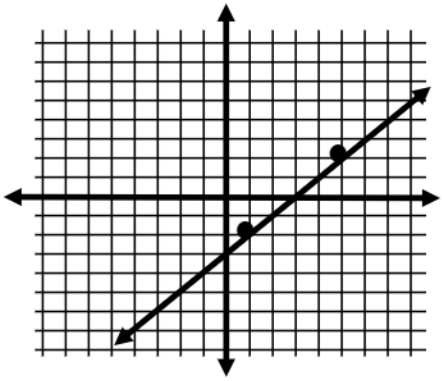
7. _____



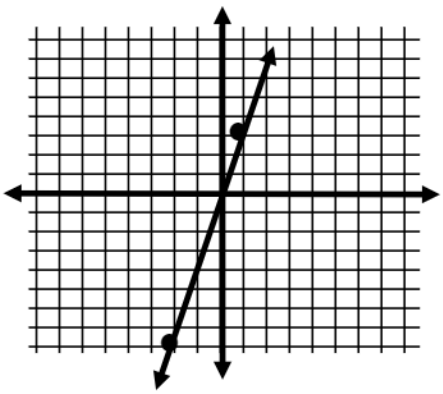
8. _____



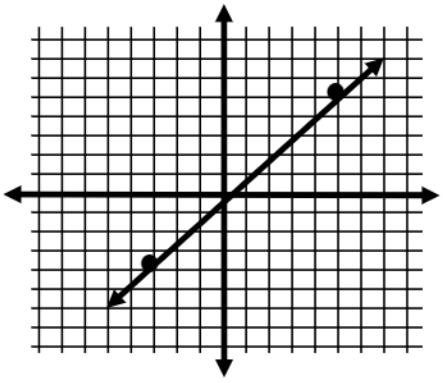
9. _____



10. _____



11. _____



12. _____