

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

Pre-Algebra

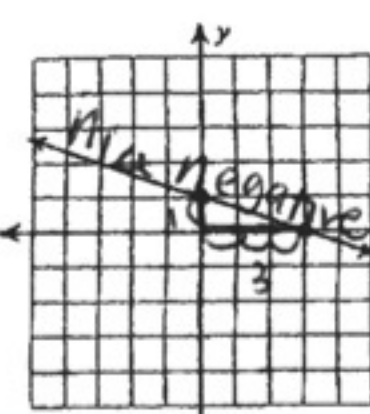
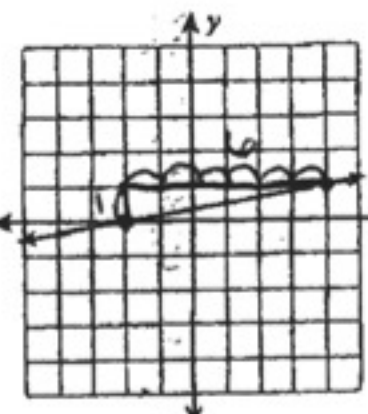
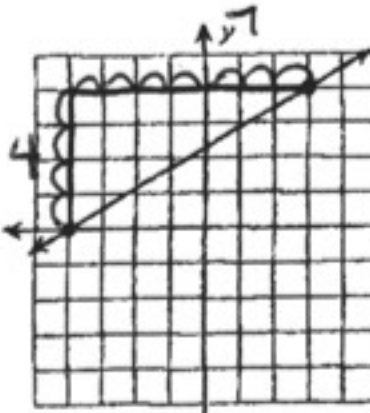
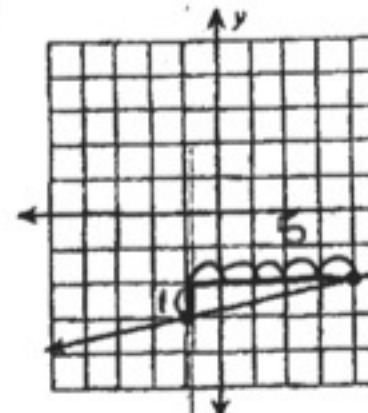
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Assignment

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

- 1) $(4, 11), (2, -7)$ $m = \frac{-7-11}{2-4} = \frac{-18}{-2} = 9$
 2) $(-14, -7), (15, -3)$ $m = \frac{-3-(-7)}{15-(-14)} = \frac{-3+7}{15+14} = \frac{4}{29}$
 3) $(20, -11), (-12, -6)$ $m = \frac{-6-(-11)}{-12-20} = \frac{-6+11}{-32} = \frac{5}{-32}$
 4) $(14, 16), (-1, -14)$ $m = \frac{-14-16}{-1-14} = \frac{-30}{-15} = 2$
 5) $(13, 17), (-3, 4)$ $m = \frac{4-17}{-3-13} = \frac{-13}{-16} = \frac{13}{16}$
 6) $(-8, 13), (7, -6)$ $m = \frac{-6-13}{7-(-8)} = \frac{-6-13}{7+8} = \frac{-19}{15}$

Find the slope of each line.

- 7)  $m = \frac{\Delta y}{\Delta x} = \frac{-1}{3}$
 8)  $m = \frac{\Delta y}{\Delta x} = \frac{1}{6}$
 9)  $m = \frac{\Delta y}{\Delta x} = \frac{4}{7}$
 10)  $m = \frac{\Delta y}{\Delta x} = \frac{1}{5}$

Write the slope-intercept form of the equation of each line given the slope and y-intercept.

- 11) Slope = $\frac{7}{3}$, y-intercept = 3
 $y = \frac{7}{3}x + 3$
 12) Slope = -4, y-intercept = 0
 $y = -4x$
 13) Slope = -6, y-intercept = -2
 $y = -6x - 2$
 14) Slope = $-\frac{1}{3}$, y-intercept = -3
 $y = -\frac{1}{3}x - 3$
 15) Slope = 3, y-intercept = 0
 $y = 3x$
 16) Slope = 0, y-intercept = -5
 $y = -5$

Find the slope (m) and y-intercept (b) of each line.

- 17) $y = \frac{9}{5}x + 3$ $m = \frac{9}{5}$, $b = 3$
 18) $y = \frac{1}{5}x + 4$ $m = \frac{1}{5}$, $b = 4$
 19) $y = -\frac{1}{2}x - 3$ $m = -\frac{1}{2}$, $b = -3$
 20) $y = \frac{7}{3}x + 4$ $m = \frac{7}{3}$, $b = 4$
 21) $y = \frac{11}{3}x + 6$ $m = \frac{11}{3}$, $b = 6$
 22) $y = -\frac{2}{3}x - 5$ $m = -\frac{2}{3}$, $b = -5$

Write the slope-intercept form of the equation of each line.

- 23) $y = -1$ $y = -1$
 24) $x - y = -5$
 $x - y - x = -5 - x$
 $-y = -x - 5$
 $-1y = -x - 5$
 $y = x + 5$
 25) $x + 2y = -5$
 $x + 2y - x = -5 - x$
 $2y = -x - 5$
 $y = -\frac{1}{2}x - \frac{5}{2}$
 26) $12x - y = -7$
 $12x - y - 12x = -7 - 12x$
 $-y = -12x - 7$
 $-1y = -12x - 7$
 $y = 12x + 7$

Find the slope from the chart.

27)

x	y
-1	-24
2	48
4	96
6	144

$(-1, -24), (2, 48)$
 x_1, y_1, x_2, y_2

$\frac{\Delta y}{\Delta x} = \frac{48 - (-24)}{2 - (-1)} = \frac{48 + 24}{2 + 1} = \frac{72}{3} = 24$

29)

Number of Movie Tickets	Total Cost of Movie Tickets (in Dollars)
2	1
4	2
8	4
10	5

$(2, 1), (4, 2)$
 x_1, y_1, x_2, y_2

$\frac{\Delta y}{\Delta x} = \frac{2 - 1}{4 - 2} = \frac{1}{2}$

28)

x	y
-6	12
-3	6
3	-6
6	-10

$(-6, 12), (-3, 6)$
 x_1, y_1, x_2, y_2

$\frac{\Delta y}{\Delta x} = \frac{6 - 12}{-3 - (-6)} = \frac{-6}{-3 + 6} = \frac{-6}{3} = -2$

x	y
-2	8
0	0
2	-4
4	-16

$(-2, 8), (0, 0)$
 x_1, y_1, x_2, y_2

$\frac{\Delta y}{\Delta x} = \frac{0 - 8}{0 - (-2)} = \frac{-8}{0 + 2} = \frac{-8}{2} = -4$

Review (Study Guide)

IT'S ALL ABOUT SLOPE.....

1. What is the formula for slope?

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

2. What is the Slope-Intercept Form formula?


$$y = mx + b$$


3. What does m stand for? m represents slope


a) List other names of slope: $\frac{\Delta y}{\Delta x}$, rise/run, rate of change

4. What does b stand for? b represents y-intercept

5. List the names of these slopes:

 undefined

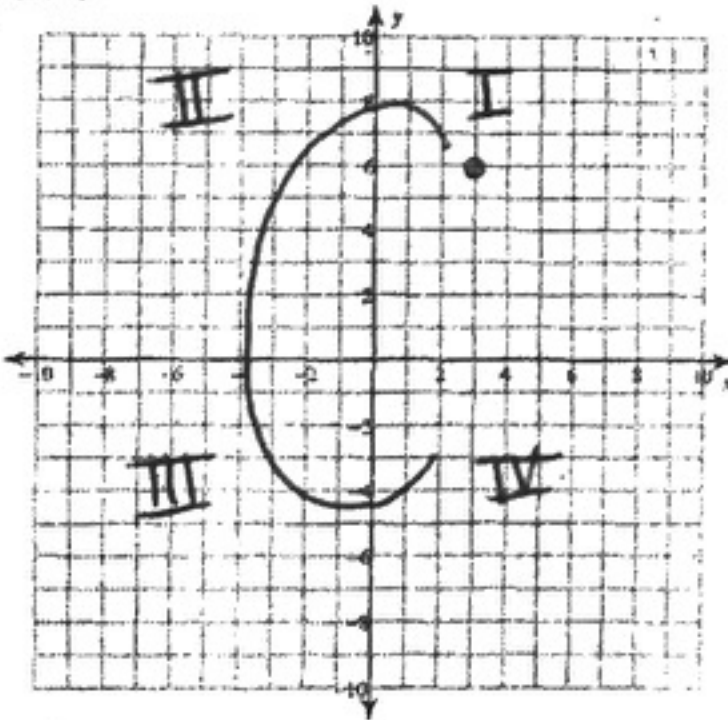
 positive

 zero

 negative

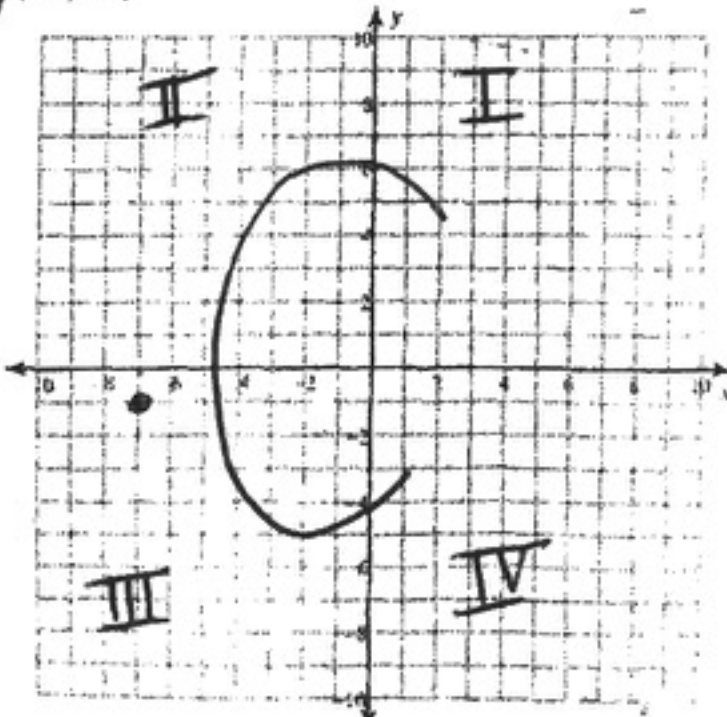
State the quadrant or axis that each point lies in.

6) (3, 6)



- A) III
B) y-axis
C) I
D) II

7) (-7, -1)



- A) y-axis
B) x-axis
C) III
D) II

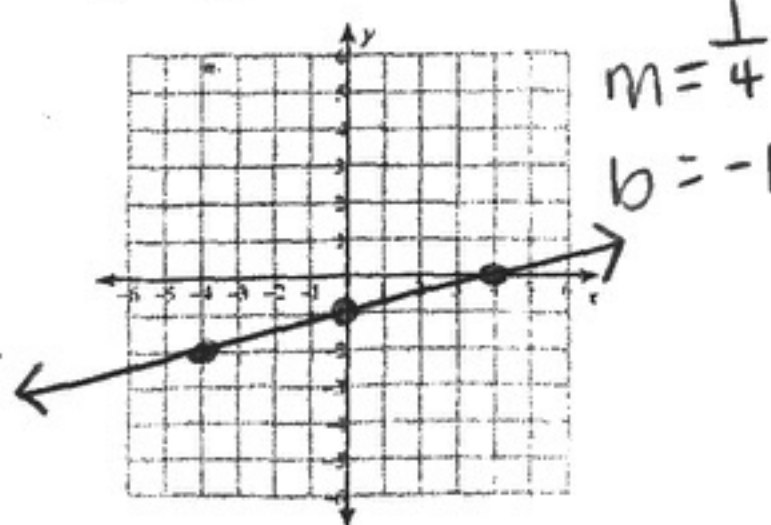
Determine the rate

8) A 9-kg bag of mangoes for \$12 9) 725 miles in 8 hours
\$1.33 per kg $\frac{\$}{\text{kg}} = \frac{\$12}{9} = \frac{\$1.33}{1 \text{ kg}}$ 91 miles per hour
 $\frac{\text{mi}}{\text{hr}} = \frac{725}{8} = \frac{91}{1}$

10) Type 1500 words in 30 minutes 11) 5000 jumps for 7 hours
50 words per minute 714 per hour
 $\frac{w}{\text{min}} = \frac{1500w}{30 \text{ min}} = \frac{50}{1}$ $\frac{\text{jump}}{\text{hour}} = \frac{5000}{7} = \frac{714}{1}$

Sketch the graph of each line.

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



13) $y = -x + 2$

