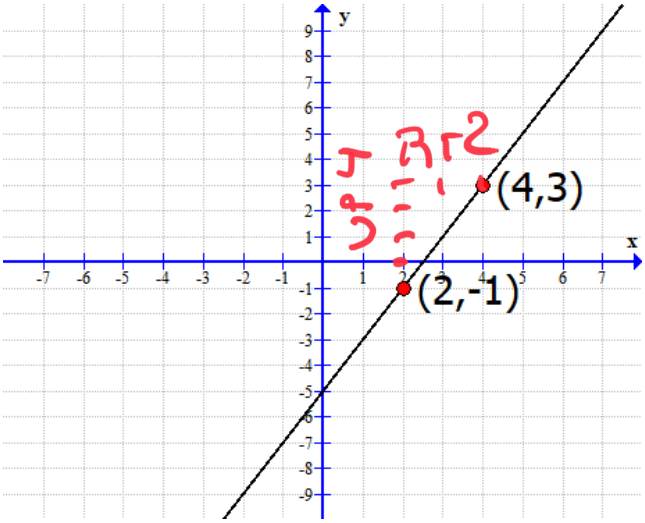
Section 2.2A – Slope of a Line

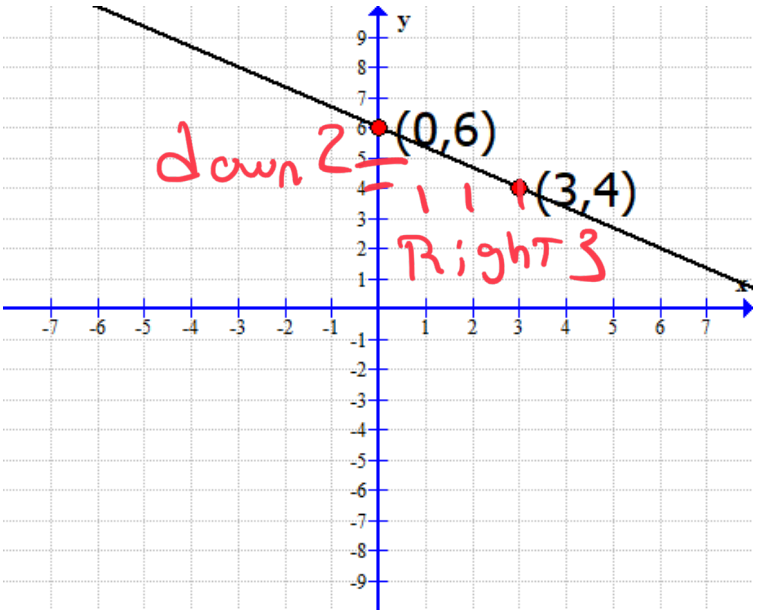
#1-8: Find the slope of the given line.

1)



$m = \frac{4}{2} = 2$

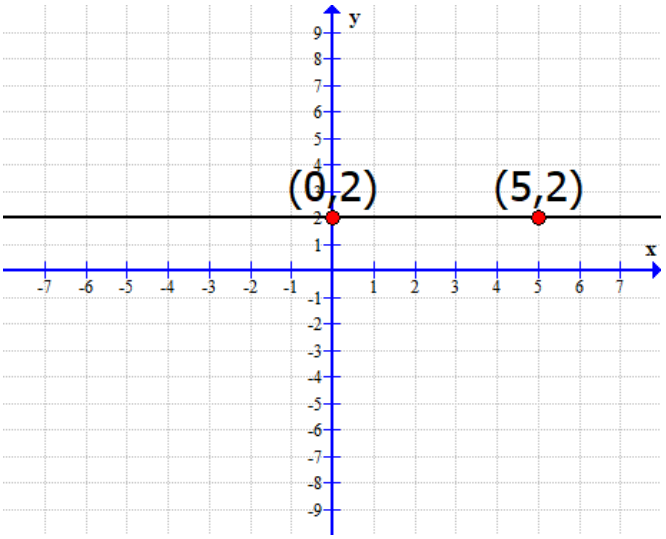
3)



down $\frac{2}{3}$ Right

$m = \frac{-2}{3}$

5)



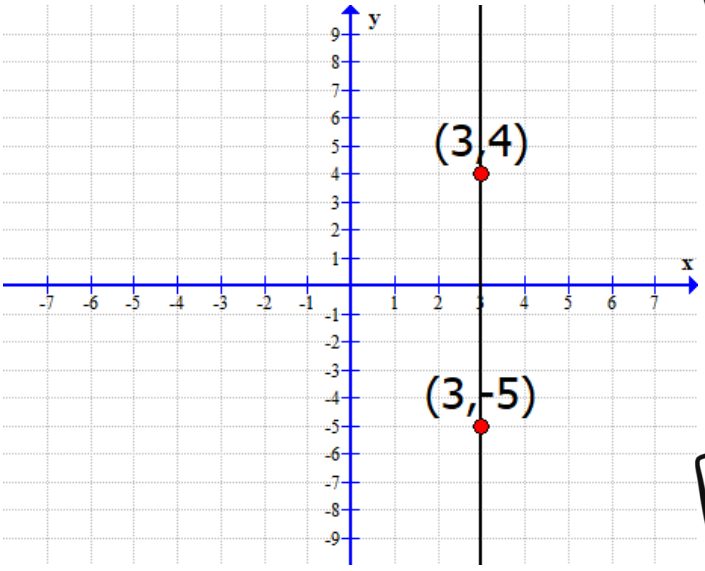
up 0

Right 5

$m = \frac{0}{5} = 0$

$m = 0$

7)



up 9

Right 0

$m = \frac{9}{0}$

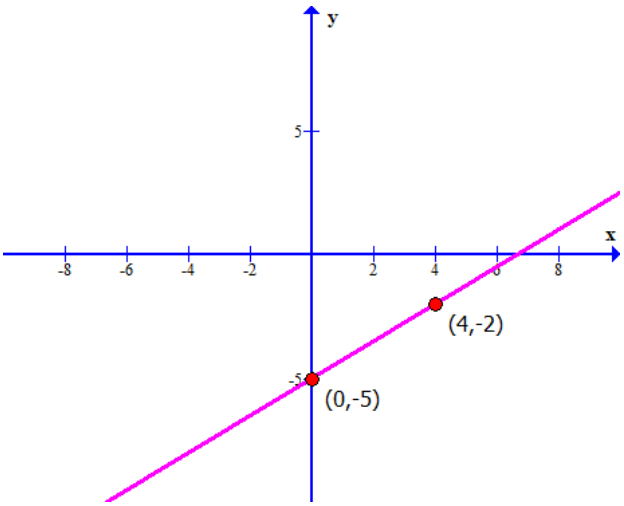
m = undefined

#9-16: Sketch the graph of the line. State the value of the slope and of the y-intercept, state if there is no y-intercept.

9) $y = \frac{3}{4}x - 5$

Plot point (0,-5)
go up 3, Right 4

$slope\ \ m = \frac{3}{4};\ \ y - intercept\ (0, -5)$

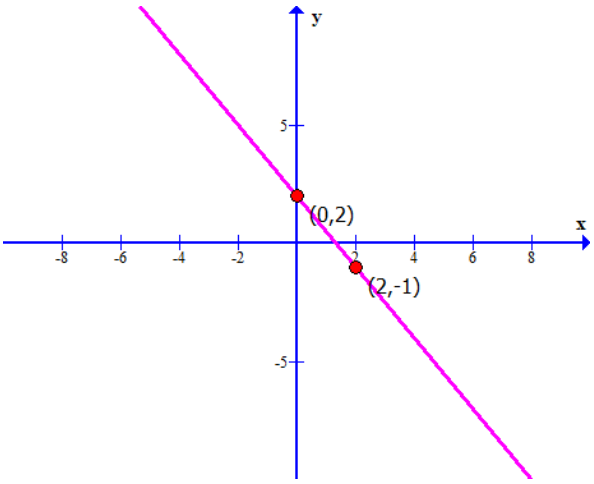


#9-16: Sketch the graph of the line. State the value of the slope and of the y-intercept, state if there is no y-intercept.

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

Plot (0,2)
go down 3 Right 2

$slope\ \ m = -\frac{3}{2};\ \ y - intercept\ (0,2)$



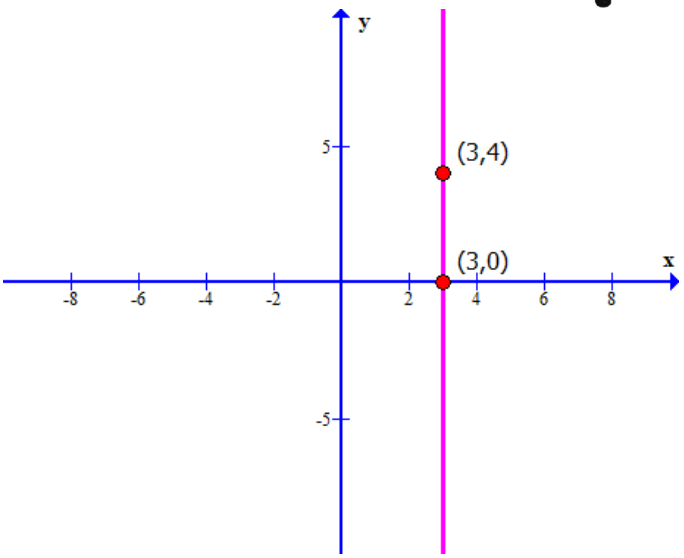
#9-16: Sketch the graph of the line. State the value of the slope and of the y-intercept, state if there is no y-intercept.

13) $x = 3$

- Vertical line through 3 on X-Axis
- does not cross y-axis No y-Intercept
- Vertical lines have undefined Slope

$slope\ \ m = undefined$

$y - intercept\ none$

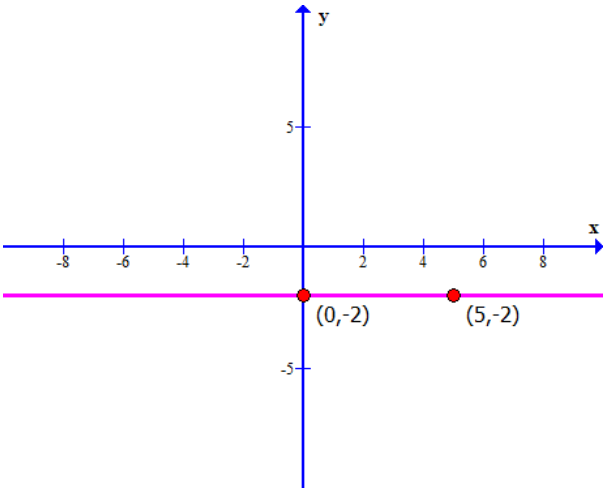


#9-16: Sketch the graph of the line. State the value of the slope and of the y-intercept, state if there is no y-intercept.

15) $y = -2$

- draw horizontal line through -2 on y-axis
- horizontal lines have zero slope

$slope\ m = 0;\ \ y - intercept\ (0, -2)$

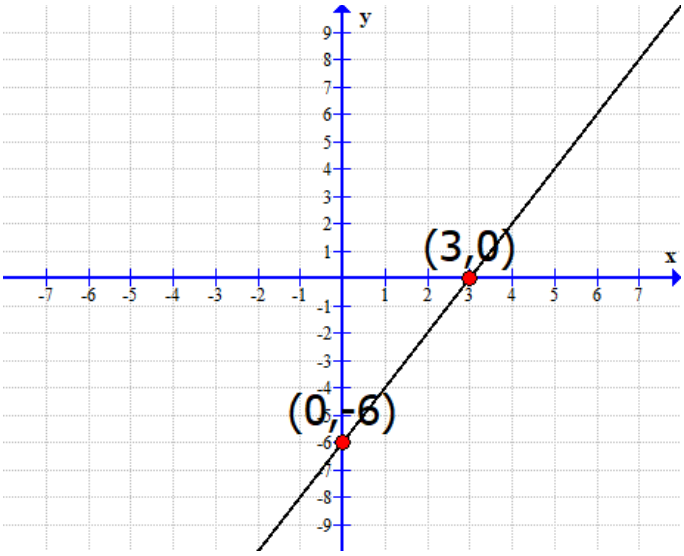


#17 – 18: Find the equation of the line. Write your equation in slope-intercept form when possible.

17a)

$b = -6$

$m = \frac{0-(-6)}{3-0} = \frac{6}{3} = 2$



$y = mx + b$

$y = 2x + -6$

or

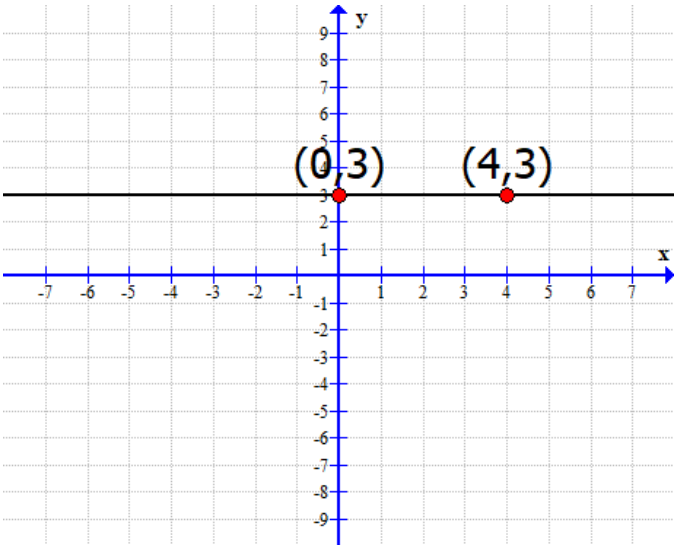
$y = 2x - 6$

#17 – 18: Find the equation of the line. Write your equation in slope-intercept form when possible.

17b)

$y = 3$

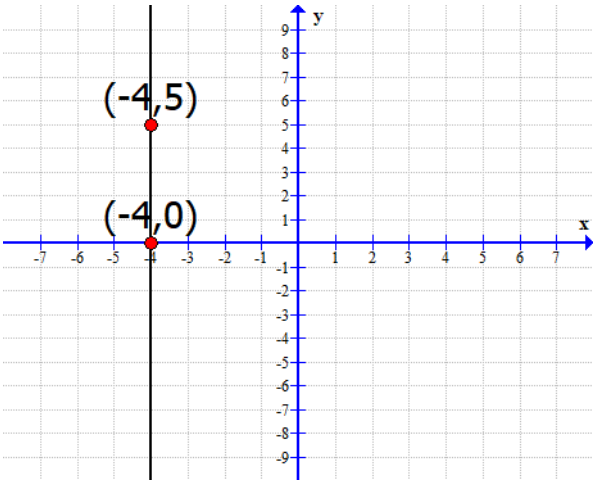
(horizontal line only has y)



#17 – 18: Find the equation of the line. Write your equation in slope-intercept form when possible.

17c)

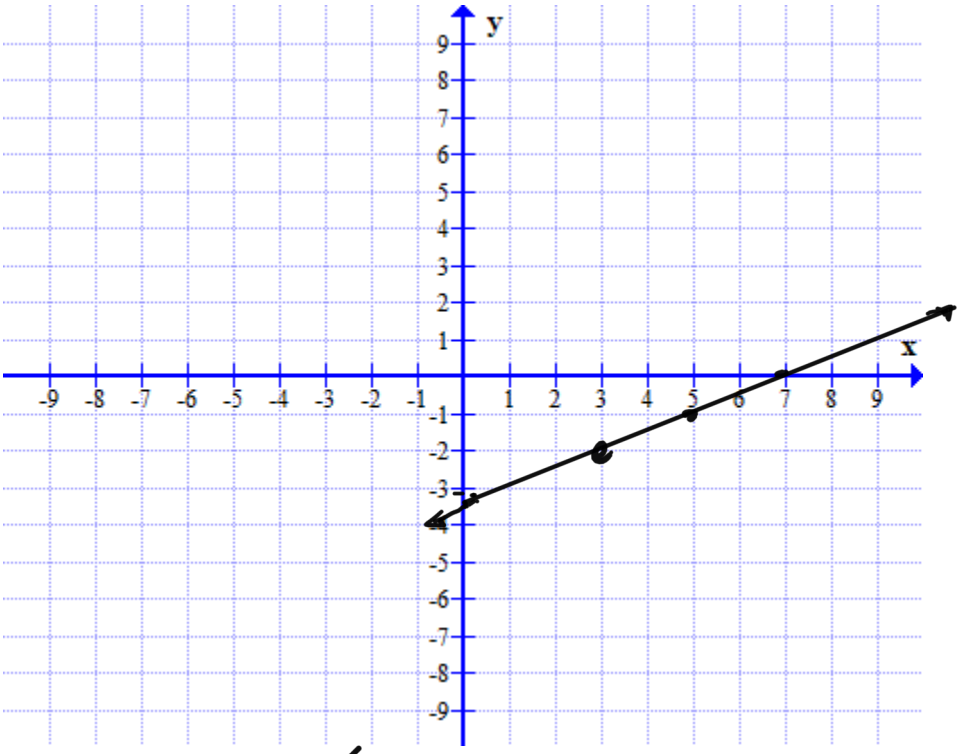
Vertical line – only has x



$x = -4$

#19-26: Sketch the graph of a line passing through the given point with the indicated slope.

19) $point\ (3,-2)\ \ slope\ = \frac{1}{2}$



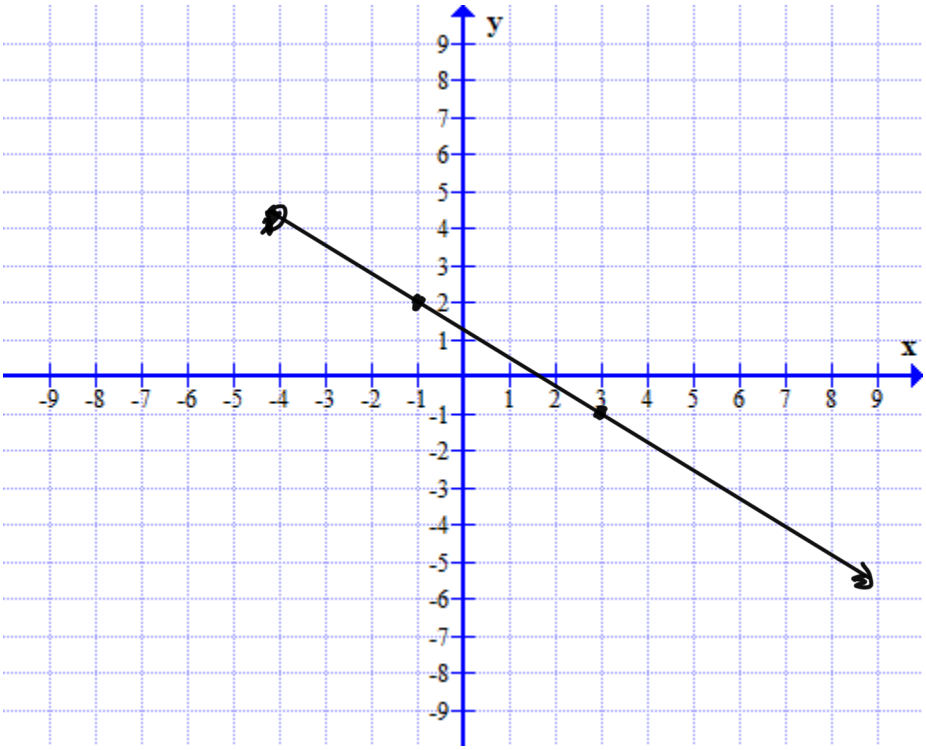
Plot (3,-2)

go up 1

Right 2

#19-26: Sketch the graph of a line passing through the given point with the indicated slope.

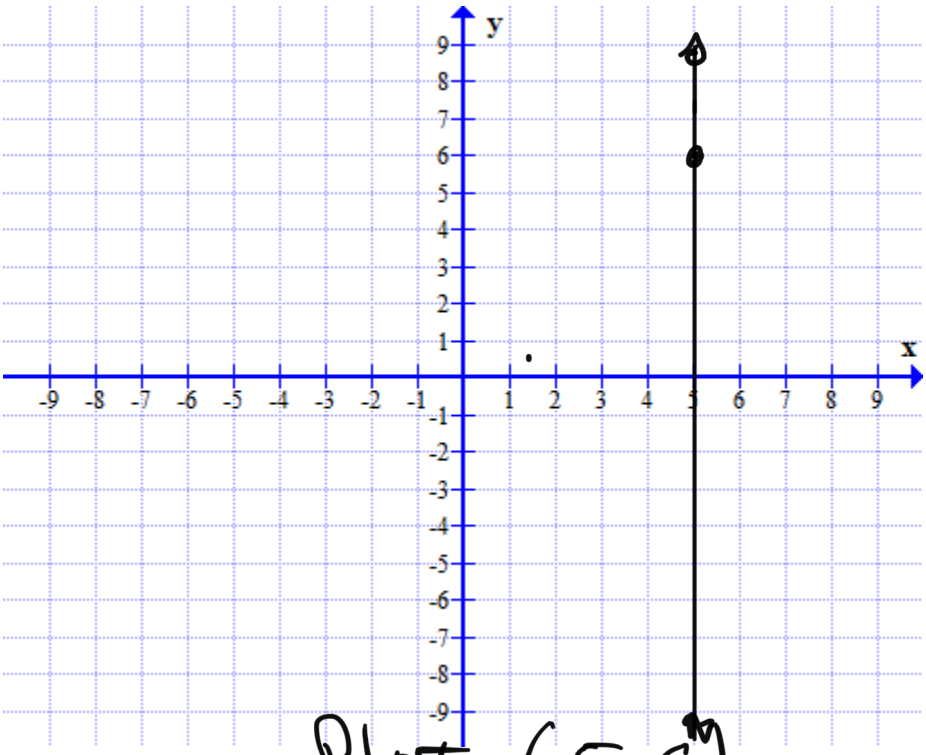
21) $point\ (-1, 2)\ \ slope\ = \frac{-3}{4}$



Plot (-1,2)
go down 3
Right 4

#19-26: Sketch the graph of a line passing through the given point with the indicated slope.

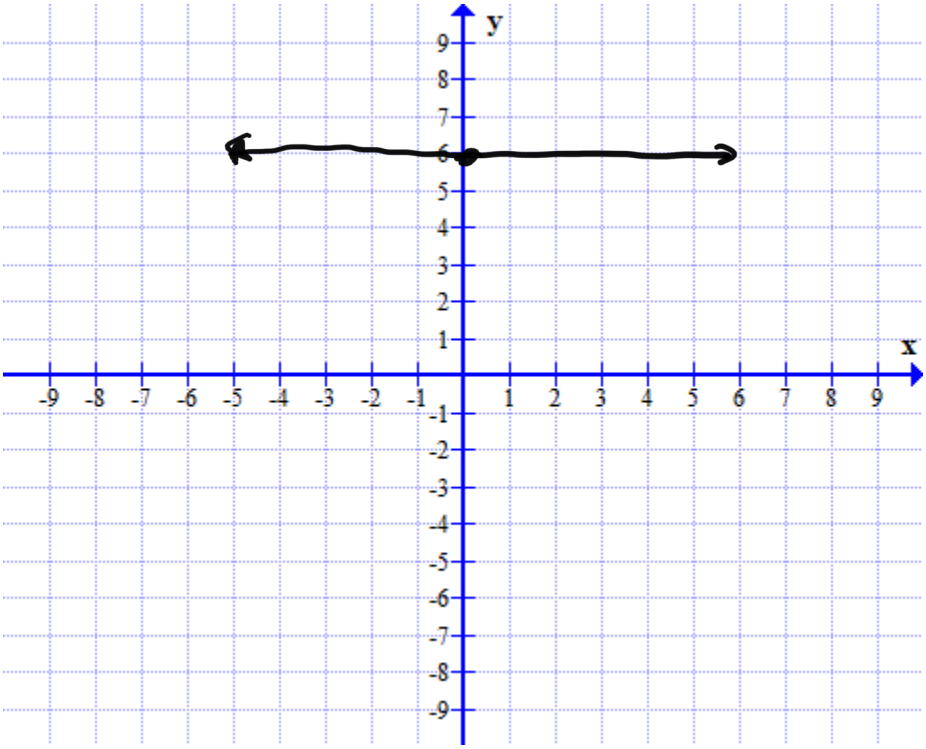
23) $point\ (5,6)\ slope = undefined$



Plot (5,6)
draw Vertical line

#19-26: Sketch the graph of a line passing through the given point with the indicated slope.

25) $point\ (0,6)\ slope = 0$



Plot (0,6)
draw horizontal line

#27 – 34: Find the slope of the line that passes through the two points.

27) $first\ point\ (1,5)\ second\ point\ (3,-6)$

$$m = \frac{-6-5}{3-1} = \frac{-11}{2}$$

$$\boxed{m = \frac{-11}{2}}$$

29) $first\ point\ (-2,-3)\ second\ point\ (4,7)$

$$m = \frac{7-(-3)}{4-(-2)} = \frac{7+3}{4+2}$$

$$m = \frac{10}{6}$$

$$\boxed{m = \frac{5}{3}}$$

31) $first\ point\ (-2,5)\ second\ point\ (9,5)$

$$m = \frac{5-5}{9-(-2)} = \frac{0}{11}$$

$$\boxed{m = 0}$$

33) $first\ point\ (-2,0)\ second\ point\ (-2,9)$

$$m = \frac{9-0}{-2-(-2)} = \frac{9}{0}$$

$$\boxed{M = \text{undefined}}$$