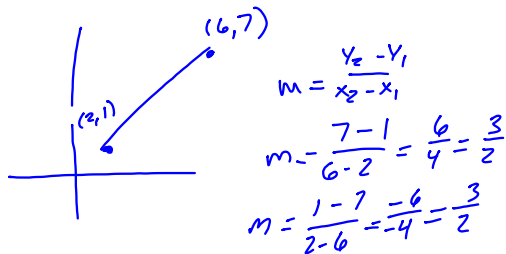
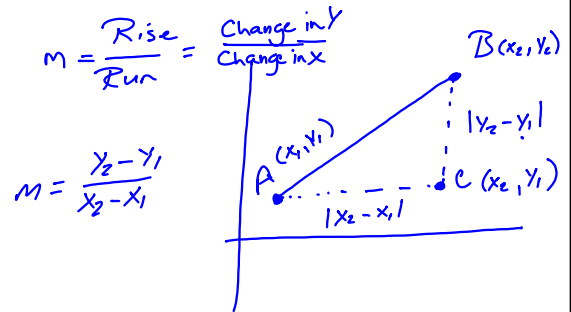


3.6 Parallel lines in a Coordinate Plane

Parallel is same slope
 $m_1 = m_2$



Other ways to find slope

1. if graphed
2. from 2 pts slope formula
3. In Equation form
 slope Intercept $y = m x + b$
 standard form $Ax + By = C$
 $m = -\frac{A}{B}$

7.17 Parallel Lines P3

In a coordinate plane
 two lines are parallel iff
 they have the same slope

All vertical lines are parallel
 (No Slope)

$l_1 (-6, 5) (-4, 0) m = \frac{5 - 0}{-6 + 4} = \frac{5}{-2} = -\frac{5}{2}$
 $l_2 (-2, 6) (0, 1) m = \frac{6 - 1}{-2 - 0} = \frac{5}{-2} = -\frac{5}{2}$
 $l_3 (0, 6) (2, 0) m = \frac{6 - 0}{0 - 2} = \frac{6}{-2} = -3$

$l_1 \parallel l_2 \quad l_1 \nparallel l_3 \quad l_2 \nparallel l_3$

Slope Intercept form
and writing Equations

A - Slope and point
Find Equation of a line through
(2, 3) parallel to $y = \frac{5}{2}x + 2$
 $x = 2$ $y = 3$ $m = \frac{5}{2}$
 $y = mx + b$ ← find b
 $3 = \frac{5}{2}(2) + b$
 $3 = 5 + b$
 $-5 -5$
 $-2 = b$

$$y = \frac{5}{2}x - 2$$

B two points

(2, -5) (6, 4)

$$m = \frac{4 - (-5)}{6 - 2} = \frac{9}{4}$$

$$y = \frac{9}{4}x - \frac{19}{2}$$

$$y = mx + b$$

$$4(-5 = \frac{9}{4}(2) + b) \quad 4(4 = \frac{9}{4}(6) + b)$$

$$-20 = 9(2) + 4b \quad 16 = 9(6) + 4b$$

$$-20 = 18 + 4b \quad 16 = 54 + 4b$$

$$-38 = 4b \quad -\frac{38}{4} = b$$

$$-\frac{19}{2} = b$$

P 168-171

2-44 even 56, 58