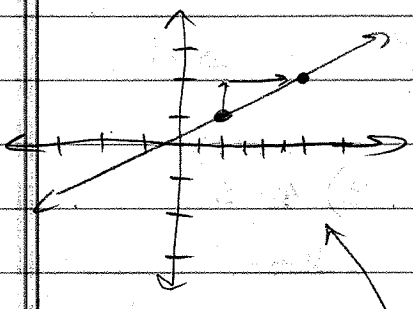


### 3.4a Find & Use Slope of Lines

\* Directions from one point to another



$$\text{Slope } (m) = \frac{\text{rise}}{\text{run}} \text{ or } \frac{y_2 - y_1}{x_2 - x_1}$$

for points  $(x_1, y_1), (x_2, y_2)$

Find slope of  $(2, 1)$  &  $(6, 2)$

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

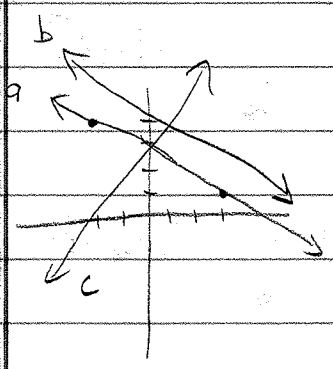
up 1, right 4 to get to next point

Find for line thru  $(-2, 4)$  &  $(3, 1)$

$$m = \frac{1-4}{3-(-2)} = \frac{-3}{5}$$

rises 3 and runs -5

or  $-\frac{3}{5}$  falls 3 and runs 5



slope of a =  $-\frac{3}{5}$  If b falls at same rate, slope =  $-\frac{3}{5}$  ... never cross (parallel)

a || b } Same Slope!  
 $m = -\frac{3}{5}$      $m = -\frac{3}{5}$

### Perpendicular Lines (Form 90° angle)

slope of a =  $-\frac{3}{5}$  , If a ⊥ c, then slope of c =  $\frac{5}{3}$

$-\frac{3}{5}$      $\frac{5}{3}$  } slopes are reciprocals & opposite sign

PT 75: 7-15, 33, 34, 39, 40

PT 75: 7, 8, 9, 11, 13-15, 33, 34

Find parallel & perpendicular slope for each:

1)  $m = \frac{2}{3}$

$\parallel m = \left(\frac{2}{3}\right)$

$\perp m = \left(-\frac{3}{2}\right)$

2)  $m = -\frac{8}{7}$

$\parallel m = \left(-\frac{8}{7}\right)$

$\perp m = \left(\frac{7}{8}\right)$

3)  $m = 5$

$\parallel m = (5)$

$\perp m = \left(-\frac{1}{5}\right)$