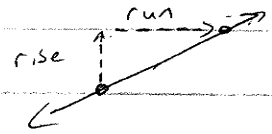
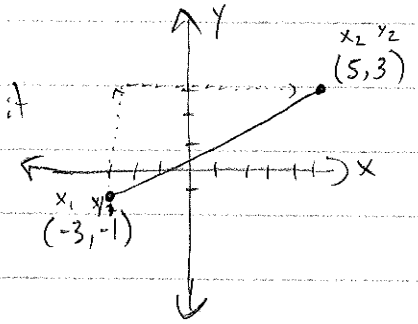
2.2 Rate of Change (Slope)

* Compares 2 things .. rise & run



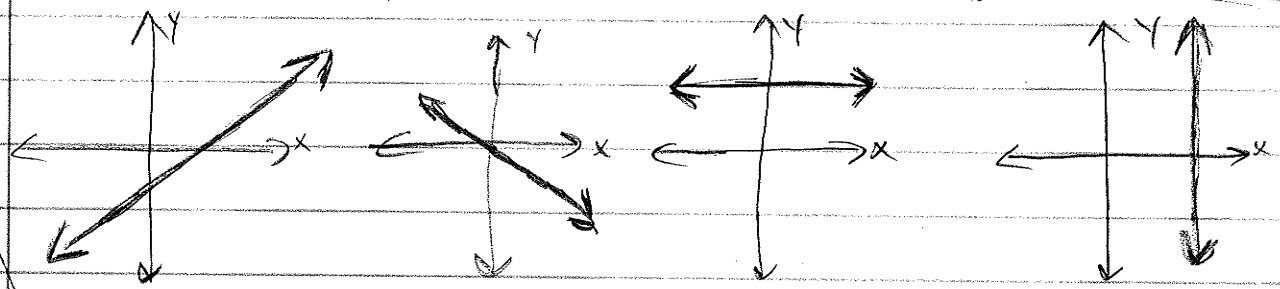
$$\text{Slope} = \frac{\text{Units of rise}}{\text{Units of run}} = \frac{y_2 - y_1}{x_2 - x_1} \text{ or } \frac{y_1 - y_2}{x_1 - x_2}$$

Find slope from (-3,-1) to (5,3)



Can count it out

$$\text{Slope } (m) = \frac{y_1 - y_2}{x_1 - x_2} = \frac{\overset{y_1}{-1} - \overset{y_2}{3}}{\underset{x_1}{-3} - \underset{x_2}{5}} = \frac{-4}{-8} = \frac{1}{2}$$

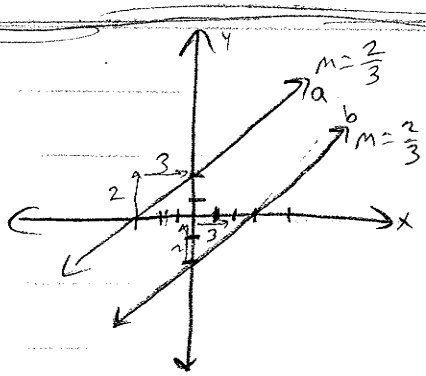


+ slope — − slope — 0 slope — undefined slope

$\frac{0}{\text{any \#}}$ (Horizontal)

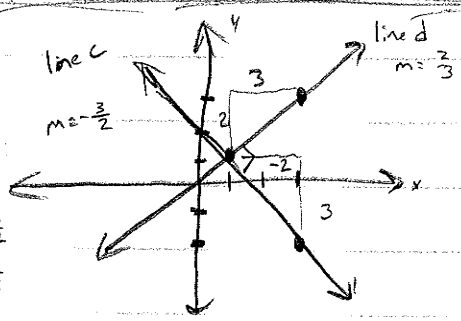
$\frac{\text{any \#}}{0}$ (Vertical)

p86: 3-15 odd, 16, 17-23 odd, 24, 25, 45



line a = $\frac{2}{3}$

line b = $\frac{2}{3}$



line c = $-\frac{3}{2}$

line d = $\frac{2}{3}$

parallel lines have = slopes

Perpendicular lines slopes are opposite & reciprocals