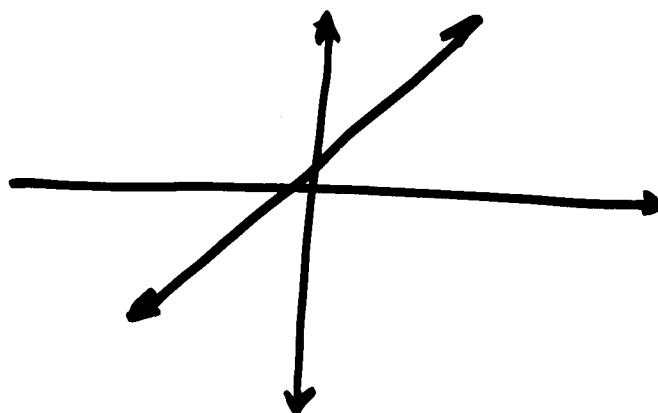
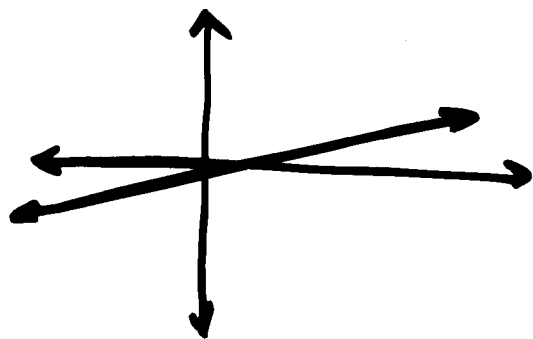


BE-1A MONDAY 1-28-08

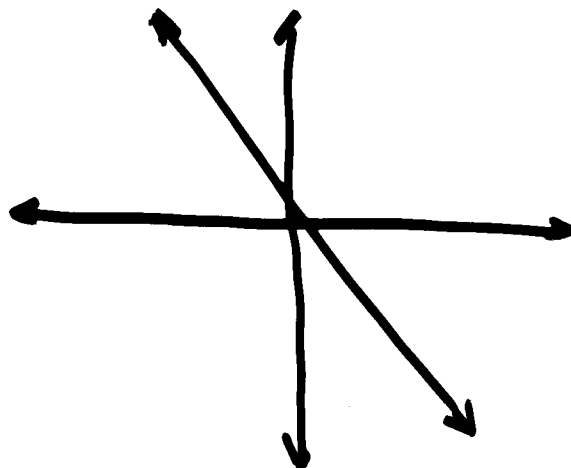
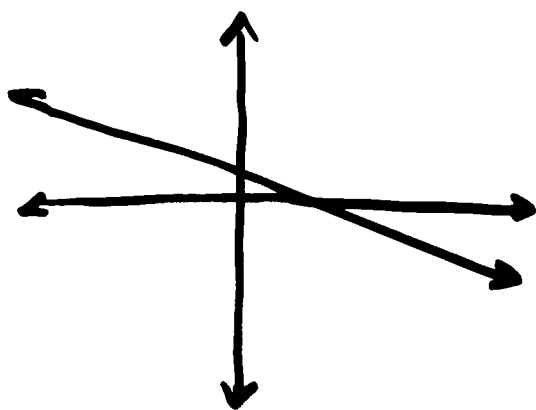
- ① Solve for y : $3x + 2y = 5$
 - ② Solve for r : $C = 2\pi r$
 - ③ Simplify: $\frac{4 - (-2)}{3 - 1}$
 - ④ Simplify: $\frac{-6 - 1}{-3 - 3}$
 - ⑤ GRAPH ON THE X-Y COORDINATE PLANE:
 - Ⓐ $y = 3$
 - Ⓑ $x = -2$
-

- M/U Quizzes
- RETURN GRADED QUIZ 3 & HW 3
- EXAM 1 THURSDAY
- NO MATH HELP TODAY - long faculty meeting :-c

Which line is steeper?



Which of these lines are steeper?



SLOPE

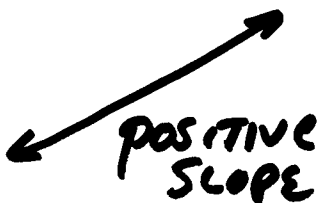
SLOPE is A NUMBER, it is A measure OF THE STEEPNESS OF A line.

How TO
Find
SLOPE

USE ANY TWO POINTS ON THE LINE.

NOTE:

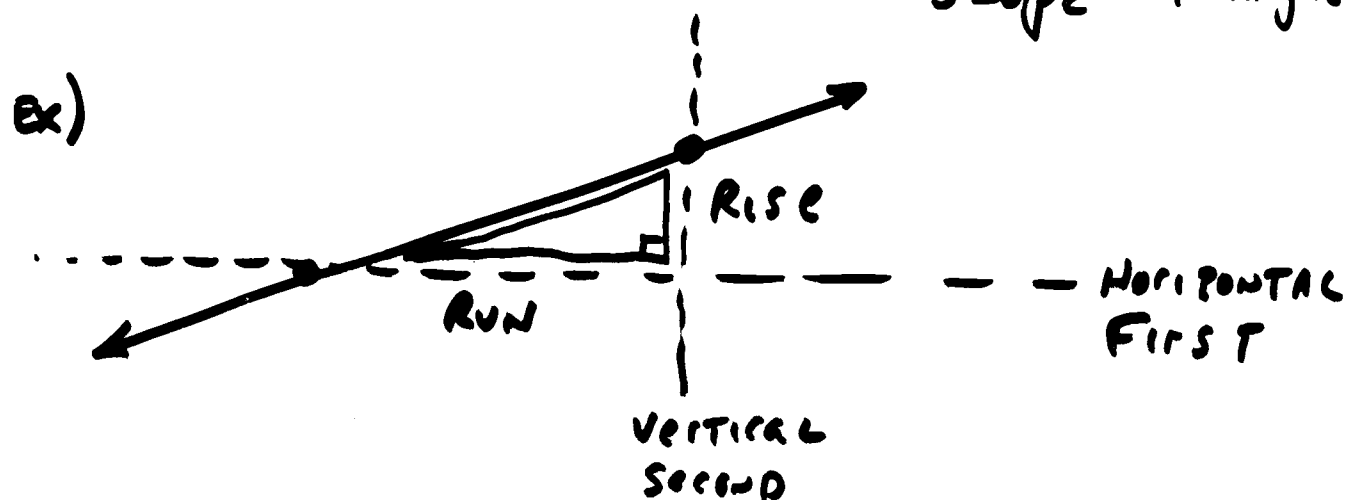
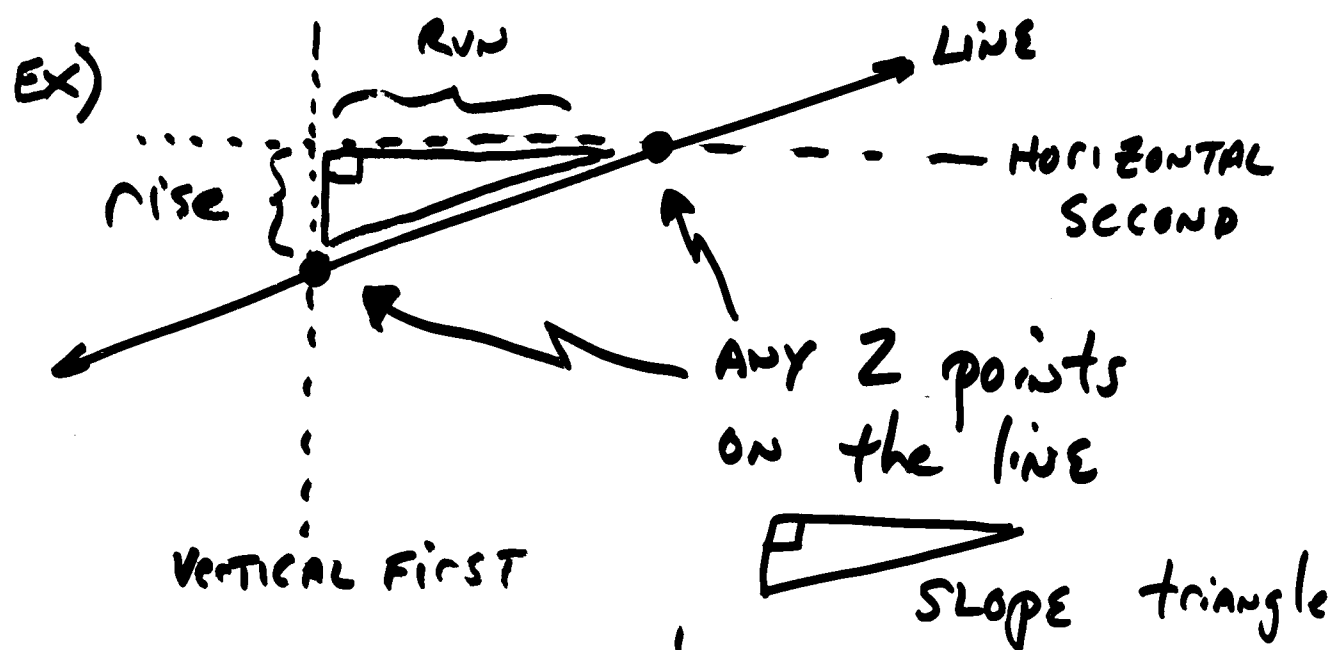
positive
SLOPE


 A line with a positive slope, passing through the origin and the first quadrant.

NEGATIVE
SLOPE

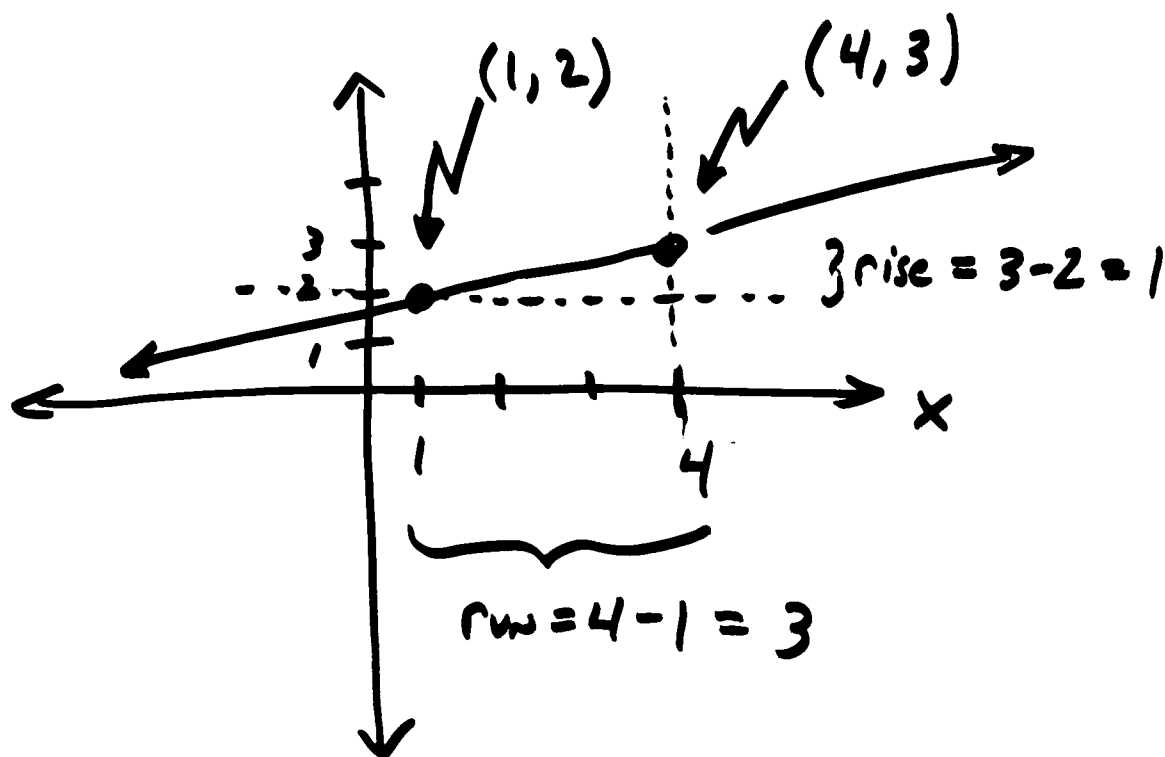

 A line with a negative slope, passing through the origin and the second quadrant.

To find the SLOPE of a line, take any 2 points — draw a horizontal or vertical line through one point and then draw the other kind through the second point to make a "slope triangle." Measure the $\frac{\text{Rise}}{\text{Run}} = \text{SLOPE}$



If your line is drawn on an X-Y Coordinate plane ... Big Advantage
 You do NOT HAVE to measure the $\frac{\text{Rise}}{\text{Run}}$ to get slope, you can use the (x, y) coordinates of any 2 points.

Ex)



$$\text{SLOPE} = \frac{\text{rise}}{\text{run}} = \frac{1}{3}$$

How TO SET UP A SLOPE problem:

EX) Find THE SLOPE of the line between $(1, 2)$ and $(4, 3)$.

$(1, 2), (4, 3)$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{3-2}{4-1} = \boxed{\frac{1}{3} = \text{slope}}$$

NOTE: $(1, 2), (4, 3)$
 $(x_1, y_1) \quad (x_2, y_2)$

$$\text{slope} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{\text{rise}}{\text{run}} = \frac{\updownarrow}{\rightleftarrows}$$

ALSO, ORDER OF POINTS DOES NOT MATTER

$(4, 3), (1, 2)$

$$\text{slope} = \frac{2-3}{1-4} = \frac{-1}{-3} = \boxed{\frac{1}{3} = \text{slope}}$$

WHAT would be a meaningful variable for slope?

Yes, s would be great. Unfortunately, for historical reasons going back about 150 years, so far back that no one remembers why, the variable used for slope is...

m
(lower case)

$$\text{SLOPE} = m = \frac{\text{rise}}{\text{run}}$$

An urban math legend says m may come from the French word *monter* = to climb, like stairs... 

EX 1
Pg 257

Find m of line through
 $(-1, 2), (3, 4)$

$(-1, 2), (3, 4)$

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

EX 2 m through $(-1, -2), (-4, 1)$

$(-1, -2), (-4, 1)$

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

↙
NEGATIVE
SLOPE

Homework: • Read Ch 5-1 "Slope"

• Pg 259 # 5-8, graph line and find its slope