Geometry

3.4 Find and Use Slope of Lines

# Slope

(x2, y2)

(x1, y1)

run

rise

m

\_\_\_\_\_\_\_\_\_\_\_\_\_

# Slope Types

+

0

–

No

Rises

Positive Slope \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Horizontal

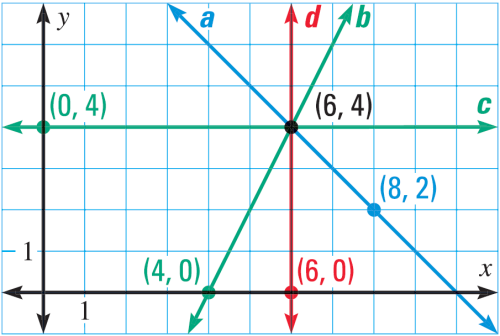
Zero Slope \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Falls

Negative Slope \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Vertical

No Slope (Undefined) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Find the slope of

Line b

Line b:

Line c:

Line c

## Slopes of Parallel Lines

parallel

nonvertical

parallel

In a coordinate plane, 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_ lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if they have the same slope.

vertical

And, any 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Example of || slopes: m1 = 2; m2 = 2

## Slopes of Perpendicular Lines

coordinate

perpendicular

In a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plane, 2 nonvertical lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if the products of their slopes are -1.

reciprocals

Or, Slopes are negative \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

perpendicular

horizontal

And, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lines are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to vertical lines

Example of perpendicular slopes: m1 = 2; m2 = -½

Tell whether the lines are parallel, perpendicular, or neither.

Line 1: through (–2, 8) and (2, –4)

Line 1: 🡪 🡪 -3

Line 2: 🡪

Perpendicular

Line 2: through (–5, 1) and (–2, 2)

Tell whether the lines are parallel, perpendicular, or neither.

Line 1: through (–4, –2) and (1, 7)

Line 1: 🡪

Line 2: 🡪

neither

Line 2: through (–1, –4) and (3, 5)

Line q passes through the points (0, 0) and (-4, 5).

Line t passes through the points (0, 0) and (-10, 7).

Which line is steeper, q or t?

mq =

mt =

Line q is steeper

Assignment: 175 #4-30 even, 34, 36, 40, 44, 46, 48 = 20 total

Extra Credit: 178 #2, 4 = +2