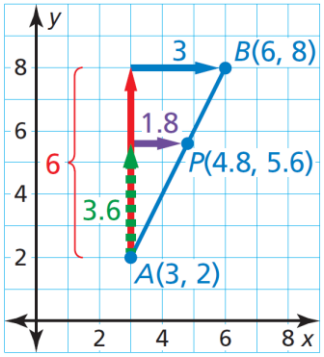
# Geometry

## 3.5A Equations of Parallel and Perpendicular Lines

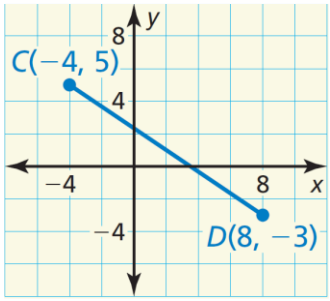
### Partitioning a Directed Line Segment

Segment from _____ to _____

1. Want the _____ of _____ to _____ to be something like 3 to 2
2. That means there are _____ pieces
3. Point _____ is _____ of the way from _____
4. Find the _____ and _____
5. Multiply the _____ and _____ by the fraction _____ and add to point _____
6. The _____ is the coordinates of _____



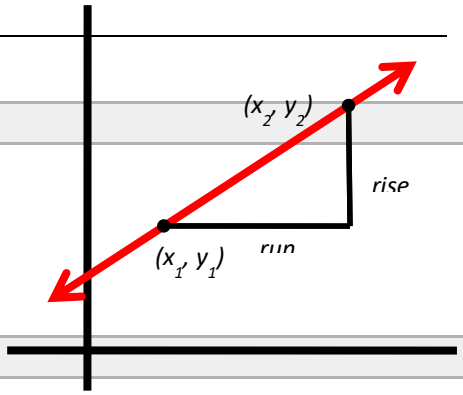

Find the coordinates of point *F* along the directed line segment *CD* so that the ratio of *CF* to *FD* is 3 to 5.




### Slope

*Slope* = _____

_____ = _____



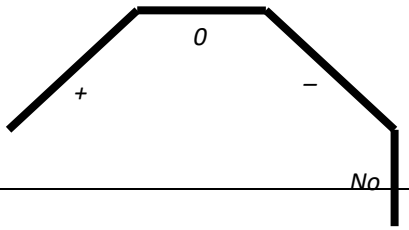

### Slope Types

Positive Slope _____

Zero Slope _____

Negative Slope _____

No Slope (Undefined) _____




### Slopes of Parallel Lines

**In a coordinate plane, 2 _____ lines are _____ if they have the same slope.**
**And, any 2 _____ lines are _____.**
**Example of || slopes: $m_1 = 2$; $m_2 = 2$**

### Slopes of Perpendicular Lines

**In a _____ plane, 2 nonvertical lines are _____ if the products of their slopes are -1.**
**Or, Slopes are negative _____.**
**And, _____ lines are _____ to vertical lines**
**Example of perpendicular slopes: $m_1 = 2$; $m_2 = -½$**

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

Line 1: through (–2, 8) and (2, –4)

Line 2: through (–5, 1) and (–2, 2)

Assignment: 154 #1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 53, 54, 57 = 13 total