

Fall in Line!

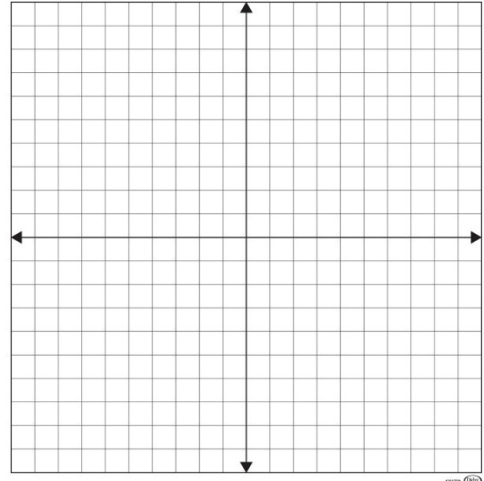


Lines are an important building block of Geometric figures. We've already looked at the angles made by intersecting lines and how to tell if two lines are parallel. Today we'll look at lines on a coordinate grid.

1. A line passes through (0,5) and (3, -1). Sketch this line on the coordinate grid below.

2. Identify three other ordered pairs that are also on the line.

3. What is the slope of this line? How do you know?



4. Write the equation of the line.

5. When the x-value is 100, what is the corresponding y-value? How do you know?

6. A different line also passes through the point (3,-1) but has a slope of $\frac{1}{2}$.

a. What is the y-intercept of this new line?

b. Sketch the line on the coordinate grid. What do you notice about this line in relationship with the first line you drew?

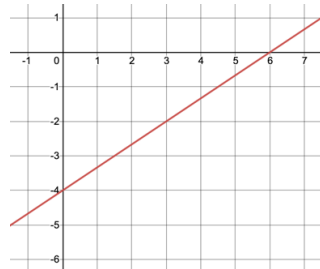
7. Write and sketch the equation of a line that is parallel to the line in question 6.

Lesson 2.6 – Coordinate Connection: Equations of Lines

QuickNotes

Check Your Understanding

1. Write the equation of the line shown.



2. Write the equation of the line that passes through $(-4, 9)$ and $(2, 15)$.
3. Which is steeper: the line given by $-5x + 2y = 8$, or a line with a slope of -3 ? Explain.
4. Determine if the lines are parallel, perpendicular, or neither. Justify your answer.
- a. $y = -4x + 2$
 $y = 4x + 8$
- b. $5x + 15y = -8$
 $y = \frac{-1}{3}x - 9$
5. Write the equation of a line that passes through $(8, -2)$ and is perpendicular to $y = -3x + 1$.