

MAT0028 ~ Lesson 22

Work the following examples as you listen to the recorded lecture.

Slope Rule for Linear Equations

Slope of a linear equation is really the direction of the line. We also think of slope as the slant or steepness of a line, and it can be measured. As you have seen in earlier instruction, slope is equal to the vertical change in a line (called the rise) over the horizontal change (called the run). Therefore you may think of slope as the change in y over the change in x . Since we can define and measure slope in terms of changes in y and x , we can also calculate slope from two points on the same line. Take a close look at the following examples:

Two Points on a Line	Calculations for Slope
$(3, 1)$ and $(4, -2)$	$m = \frac{-2 - 1}{4 - 3} = \frac{-3}{1} = -3$
$(-2, 0)$ and $(1, 5)$	$m = \frac{5 - 0}{1 - (-2)} = \frac{5}{3}$
$(4, 3)$ and $(-1, -2)$	$m = \frac{-2 - 3}{-1 - 4} = \frac{-5}{-5} = 1$
$(0, 6)$ and $(4, -2)$	$m = \frac{-2 - 6}{4 - 0} = \frac{-8}{4} = -2$

Use the Slope Rule to calculate the slope for the following lines.

Two Points on a Line	Calculations for Slope
$(4, 3)$ and $(-1, -2)$	$m =$
$(0, 6)$ and $(4, -2)$	$m =$
$(2, -1)$ and $(3, -6)$	$m =$
$(5, 0)$ and $(-4, 2)$	$m =$