

The slide features a light beige background with a blue grid pattern in the top-left and bottom-right corners. A dark blue rectangular area is positioned on the left side, containing the title and chapter information. A vertical red bar is located on the far left edge of the slide.

Algebra 1

Chapter 5
Section 5-1

Comparing Variables

The table below shows how quickly the Thanksgiving Day Parade travels along the designated parade route.

Time (min)	Distance (blocks)
5	6
10	12
15	18
20	24

How fast does the parade travel?

6 blocks in 5 minutes

$$\frac{6 \text{ blocks}}{5 \text{ minutes}}$$

$$b = (6/5) m$$

Comparing Variables

The table below shows the pricing chart for a Thanksgiving turkey based on its weight.

Weight (pounds)	Price (dollars)
20	31.00
21	32.50
22	34.00
23	35.50

What is the unit price for a turkey?

\$1.50 per pound

$$\frac{\$1.50}{1 \text{ pound}}$$

$$d = 1.50p + 1$$

Rates of Change

$$\text{rate of change} = \frac{\text{change in the dependent variable}}{\text{change in the independent variable}}$$

A student scores 98 on a test for one incorrect answer and scores 90 for five correct answers. What is the rate of change?

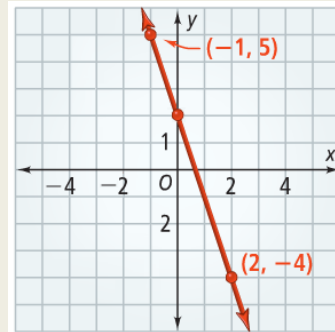
$$\frac{-8}{4} = -2$$

A plant measures 24" tall at an age of two years and 27" at two years and three months. What is the rate of change?

$$\frac{3}{3} = 1$$

Slope

$$\text{slope} = \frac{\text{vertical change}}{\text{horizontal change}} = \frac{\text{rise}}{\text{run}}$$



$(3, 1)$ and $(5, 3)$
Rise: 2
Run: 2
Slope: $2/2 = 1$

$(-1, 5)$ and $(2, -4)$
Rise: -9
Run: 3
 $-9/3 = -3$

Slope Formula

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

Use two ordered pairs: (x_1, y_1) and (x_2, y_2)

**** $x_1, y_1, x_2,$ and y_2 represent numbers**

Find the slope of the line containing points $(2, 3)$ and $(6, 5)$.

$$\frac{5 - 3}{6 - 2} = \frac{1}{2}$$

Find the Slope

(11, 20) and (-5, 20)

(4, 3) and (17, 5)

(-9, 1) and (3, 2)

(8, 3) and (9, 13)

(5, -4) and (5, 3)

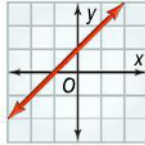
Slope Meaning

Which of these graphs are functions?

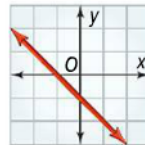
Take note

Concept Summary Slopes of Lines

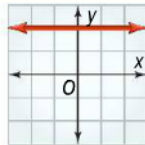
A line with positive slope slants upward from left to right.



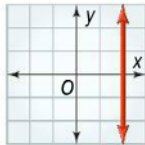
A line with negative slope slants downward from left to right.



A line with a slope of 0 is horizontal.



A line with an undefined slope is vertical.



All but the bottom right are functions because they pass the vertical line test