

## Indicators

### Objective:

#### 5.01 Develop an understanding of function.

- c) Find, identify, and interpret the slope (rate of change) and intercepts of a linear relation.

Vocabulary and Resources	
coordinate plane	x-intercept
y-intercept	function

**A.** The total amount paid on a charge card can be represented by the equation  $y = 0.18x + 25$ , where there is an 18% annual interest rate plus a \$25 annual fee.

- Graph the linear equation on a coordinate plane.
- Determine the slope and explain its meaning.
- Determine the  $y$ -intercept and explain its meaning.

**B.** Jack and Jill started a lemonade stand by borrowing \$10 worth of supplies from their mom. They charged \$0.50 per cup of lemonade. Write an equation to represent their profit.

- Graph the linear equation on a coordinate plane.
- Determine the slope and explain its meaning.
- Determine the  $x$ - and  $y$ -intercepts and explain their meaning.

**C.** MovieTime Video charges a \$10 yearly membership fee and \$5 to rent each video. Using the information given in the table regarding yearly cost, determine the equation to represent this function. Draw a line of best fit for the data. Determine the slope and explain its meaning. Determine the  $y$ -intercept and explain its meaning. Determine the cost for renting 60 videos.

# of Videos	0	10	20	30	40
Cost	\$10	\$60	\$110	\$160	\$210

**D.** Students in a local university will see their student fees increase from \$954 in 2002 to \$982 in 2003. Assuming this is a linear trend, how much will students be paying for student fees in 2006? What is the slope of the linear relation which describes this growth in fees?

**E.** Describe the change in the graph of  $y = ax + 7$  as  $a$  increases in value.

**F.** Describe the change in the graph of  $y = 2x + b$  as  $b$  decreases in value.