

Name \_\_\_\_\_

Date \_\_\_\_\_

**Determining and Predicting the Rate of Change - Independent Practice Worksheet**

Complete all the problems.

1. Let  $y = y^3 - 6$ . Find the average rate of change of  $y$  with respect to  $x$  over the interval  $[4, 6]$ .

2. Find the slope of the points  $(-4, 9)$  and  $(6, -2)$ .

3. Elaine weighs 65 kilograms. She wants to increase her weight for basketball season. She begins to eat more and train. After 5 weeks, she weighs 75 kilograms. If we were to draw a line to represent Elaine's situation, what would the slope be?

4. Let  $y = y^2 - 1$ . Find the average rate of change of  $y$  with respect to  $x$  over the interval  $[2, 8]$ .

5. Find the slope of the points  $(5, 4)$  and  $(8, 3)$ .

6. The height of a tree is 3 feet long. After 2 years it was 6 feet long. What does the slope of the line of this situation tell us about the tree's growth (negative or positive)?

7. Jazzy makes 5 handmade cards in a week. In the following 2 weeks, he makes 6 new handmade cards. He graphs the rate at which he is making cards. What does the slope of the line tell us about the rate at which Jazzy makes handmade cards? Is it negative or positive?

8. Let  $y = y^2 - 3$ . Find the average rate of change of  $y$  with respect to  $x$  over the interval  $[5, 9]$ .

9. Let  $y = y^3 - 2$ . Find the average rate of change of  $y$  with respect to  $x$  over the interval  $[8, 12]$ .

10. Find the slope of the points  $(-10, 4)$  and  $(4, -6)$ .

