

## PreCal Homework 1.3 Worksheet

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### True False Questions

Indicate True or False for the following Statements.

1. If  $y = x^2 - 12x$ , then the average rate of change of  $y$  is 0 *units per unit* increase in  $x$  over the interval  $[1, 11]$ . ( True/False )

### Multiple Choice Questions

For each question, four alternative choices are given, of which only one is correct. You have to select the correct alternative and mark it in the appropriate option.

2. From 2002 - 2009 the number of gas stations in a certain country increased by 100 stations per year. In 2004 there were 1100 gas stations. Write a linear equation for the number of gas stations,  $(y)$ , as a function of time,  $(t)$  where  $t = 0$  represents the year 2002.
  - a.  $y = 900 + 100t$
  - b.  $y = 950 + 240t$
  - c.  $y = 900 - 100t$
  - d.  $y = 900t + 100$
3. Consider the equation of a linear function  $y = mx$ , where  $m$  is the slope of the line. For what values of  $m$  will the function be an increasing function? For what values of  $m$  will the function be a decreasing function?
  - a. Increasing:  $m > 0$ , Decreasing:  $m < 0$
  - b. Increasing:  $m < 0$ , Decreasing:  $m > 0$
  - c. Increasing:  $m < 0$ , Decreasing:  $m < 0$
  - d. Increasing:  $m > 0$ , Decreasing:  $m = 0$
4. The distance that an object travels in  $t$  seconds is given by  $S = 14t$  feet. What is the average velocity over the time interval  $[1, 5]$ ?
  - a. 11 feet/sec
  - b. 14 feet/sec
  - c. 10 feet/sec
  - d. 12 feet/sec
5. Find the average rate of change of the function  $f(x) = x^3 + 2x$  from  $x=2$  to  $x=4$ 
  - a. 1/6
  - b. 9
  - c. 72
  - d. 6