Average Rate of Change of a Function

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the average rate of change for the function between the given values.

1) $f(x) = -3x + 9$; from 1 to 3

  A) 9   B) -3   C) 3   D) -9

1) _____

2) $f(x) = x^2 + 5x$; from 5 to 8

  A) 13   B) $\frac{27}{4}$ C) $\frac{104}{3}$ D) 18

2) _____

3) $f(x) = \sqrt{2x}$; from 2 to 8

  A) $-\frac{3}{10}$ B) $\frac{1}{3}$ C) 7   D) 2

3) _____

4) $f(x) = \sqrt{2x - 1}$; from 1 to 5

  A) -2   B) -28   C) $-\frac{1}{6}$ D) $\frac{1}{2}$

4) _____

Suppose that a ball is rolling down a ramp. The distance traveled by the ball is given by the function s(t), where t is the time, in seconds, after the ball is released, and s(t) is measured in feet. For the given function, find the ball's average velocity from t_1 to t_2.

5) $s(t) = 10t^2$; $t_1 = 2$ to $t_2 = 3$

  A) 90 ft/sec   B) 50 ft/sec   C) 5 ft/sec   D) 100 ft/sec

5) _____

6) $s(t) = 11t^2$; $t_1 = 3$, $t_2 = 3.5$

  A) 35.75 ft/sec   B) 71.5 ft/sec   C) 134.75 ft/sec   D) 17.875 ft/sec

6) _____

7) $s(t) = 12t^2$; $t_1 = 3$, $t_2 = 3.001$

  A) -72.012 ft/sec   B) 0.072012 ft/sec

  C) 7.212 ft/sec   D) 72.012 ft/sec

7) _____

Solve the problem.

8) A deep sea diving bell is being lowered at a constant rate. After 12 minutes, the bell is at a depth of 600 ft. After 30 minutes the bell is at a depth of 1900 ft. What is the average rate of lowering per minute? Round to the nearest hundredth as needed.

  A) 63.33 ft per minute   B) 72.22 ft per minute

  C) 43.33 ft per minute   D) 0.01 ft per minute

8) _____

9) A deep sea diving bell is being lowered at a constant rate. After 10 minutes, the bell is at a depth of 300 ft. After 35 minutes the bell is at a depth of 1500 ft. What is the average rate of lowering per minute? Round to the nearest hundredth as needed.

  A) 0.02 ft per minute   B) 42.86 ft per minute

  C) 48.00 ft per minute   D) 34.29 ft per minute

9) _____

Answer Key
Testname: AVERAGE RATE OF CHANGE OF A FUNCTION

1) B
2) D
3) B
4) D
5) B
6) B
7) D
8) B
9) C