

Answers to Rate of Change Worksheet

1 a) $y = -4.9t^2 + 450$

b. -39.2 m/sec

c. -49 m/sec

d) $t = 9.593$ sec

e) $v = -93.9134$ m/s

2. $-32/ -25.6/ -24.8/ -24.2/ -24$ ft/ sec

3. $55.51/ 55.92/ 56.257/ 56.3317 / 56.3391$

b) 56.34

c) Rising

4 a) $3 / 2/ 1.5/ 1.1$

b) 1

5 a) 2

b) 1.95

c) 2.2

d) approx 2.0

6 a) $h(t) = -16t^2 + 40t$

b) $v(t) = -32t + 40$; -24

7. $h(t) = 58t - .83t^2$

a) $v(t) = 58 - 1.66t/ 56.34$

b) $v(a) = 58 - 1.66a$

c) $t = 69.880$

d) -58

8) $v(t) = 12t^2 + 6$

a) $v(a) = 12a^2 + 6$

b) $v(1) = 18$

c) $v(2) = 54$

d) $v(3) = 114$

9a) $11.75/ 11/ 10/ 9$

b) approx 9

10) $C'(x) = 10 + 0.1x$

b) $C'(100) = 10 + .1(100) = 20$

11. -2222.222 gal/min

12 a) $7 - 2t$

b) $(3.5, 10]$

13 a) $v(t) = 3t^2 - 12t + 9$

b) $v(2) = -3$; $v(4) = 9$

c) $t = 1$ and 3 seconds

d) $[0, 1)$ and $(3, \infty)$

e) 28

14 a) $2t - 6$

b) -2

c) $t = 3$

d) $(3, \infty)$

e) 10

15 a) 91

b) 76.51

c) 75.1

d) 75