

$$94) F(t) = t^2 - 7 \quad [3, 3.1]$$

$$v(t) = 2t$$

$$v_{ave} = \frac{F(3.1) - F(3)}{3.1 - 3} = \frac{2.61 - 2}{0.1} = 6.1$$

$$v(3.1) = 6.2$$

$$v(3) = 6$$

$$97) S(t) = -16t^2 + v_0 t + s_0$$

$$a) S(t) = -16t^2 + 1362$$

$$v(t) = -32t$$

$$b) v_{ave} = \frac{S(2) - S(1)}{2 - 1} = \frac{1298 - 1346}{1} = -48$$

$$c) v(2) = -64$$

$$v(1) = -32$$

$$d) 0 = -16t^2 + 1362$$

$$t = 9.226 \text{ sec}$$

$$e) v(9.226) = -295.232 \text{ Ft/sec}$$

$$98) S(t) = -16t^2 - 22t + 220$$

$$v(t) = -32t - 22$$

$$v(3) = -118 \text{ Ft/sec}$$

$$108 = -16t^2 - 22t + 220$$

$$16t^2 + 22t - 112 = 0$$

$$8t^2 + 11t - 56 = 0$$

$$t = 2.046 \text{ sec}$$

$$v(2.046) = -32(2.046) - 22 = -87.472 \text{ Ft/sec}$$

