

1)  $v(t) = 9t^2 - 60t + 64$   
 $v(1) = 13 \text{ ft/sec Right}$   
 $v(4) = -32 \text{ ft/sec Left}$

2)  $v(t) = 3t^2 - 12t + 9 = 0$

a)  $t = 1 \text{ sec}, t = 3 \text{ sec}$

b)  $(1, 3)$  \* Show on graph of  $v(t)$   
 this is where  $v(t) = \text{NEG.}$

c)  $s(0) = 1$   
 $s(1) = 5$   
 $s(3) = 3$   
 $\left. \begin{matrix} > 4 \\ > 2 \end{matrix} \right\} \boxed{6 \text{ ft}}$

d)  $a(t) = 6t - 12 = 0$   
 $t = 2$

$v(2) = -3 \text{ ft/sec}$

e)  $s(0) = 1$   
 $s(6) = 55$   $\boxed{54 \text{ ft}}$

3)  $s(t) = -16t^2 + 850 = 0$

b)  $t = 7.289 \text{ sec.}$

$v(t) = -32t$

$v(7.289) = -233.248 \text{ ft/sec}$

c)  $850 \text{ ft.}$

4)  $s(t) = -16t^2 + 915t$

$v(t) = -32t + 915 = 0$

a)  $t = 28.594 \text{ sec}$

b)  $s(28.594) = 13,081.641 \text{ ft}$

c)  $-16t^2 + 915t = 0$

$t(-16t + 915) = 0$

$t = 0, t = 57.188 \text{ sec.}$

$v(57.188) = -915.016 \text{ ft/sec}$

5)  $v(t) = 6t - 2 = 0$   
 $t = 1/3$

a)  $s(0) = 4$   
 $s(1/3) = 3.667$   
 $s(5) = 69$   
 $\left. \begin{matrix} > 3.333 \\ > 65.333 \end{matrix} \right\}$

$\boxed{65.666 \text{ ft}}$

b)  $\boxed{65 \text{ ft to the right}}$

6)  $s(t) = -16t^2 - 15t + 75$

a)  $v(t) = -32t - 15$   
 $a(t) = -32$

b)  $-16t^2 - 15t + 75 = 0$   
 $t = 1.746 \text{ sec}$

$v(1.746) = -70.872 \text{ ft/sec}$

c)  $s(5) = 63.5 \text{ ft.}$

7)  $s(t) = -t^3 + 7t^2 - 9t - 3$

a)  $v(t) = -3t^2 + 14t - 9$

$s(6) = -21 \text{ ft.}$

$v(6) = -33 \text{ ft/sec}$

b)  $a(t) = -6t + 14 = -7$   
 $t = 3.5$

$s(3.5) = 8.375 \text{ ft.}$

$v(3.5) = 3.25 \text{ ft/sec}$

c)  $-t^3 + 7t^2 - 9t - 3 = 5$

$t = 2.841$

$a(2.841) = -3.646 \text{ ft/sec}^2$

$t = 4.752$

$a(4.752) = 24.032 \text{ ft/sec}^2$

14.512

8)  $s(t) = 16t^2 + 225t + 560$   
 $v(t) = -32t + 225$

b)  $-32t + 225 = 0$

$t = 7.031 \text{ sec}$

$s(7.031) = 1351.016 \text{ ft}$

b)  $-16t^2 + 225t + 560 = 0$

$t = 16.220 \text{ sec}$

$v(16.22) = -294.04 \text{ ft/sec}$