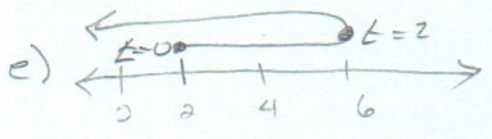


2.6 Solutions

① a/b) $v(t) = 4 - 2t$
 $a(t) = -2$

c) Left (0, 2)
 Rt (2, ∞)

d) $t=0$ $s=2m$ $a=-2m/sec^2$
 $t=2$ $s=6$ $a=-2m/sec^2$

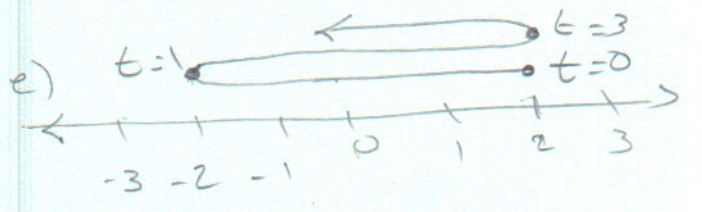


1-6 note - "clock" starts ticking at $t=0$ sec

④ a/b) $v = -9 + 12t - 3t^2$
 $a = 12 - 6t$

c) Left (0, 1) U (3, ∞) Rt (1, 3)

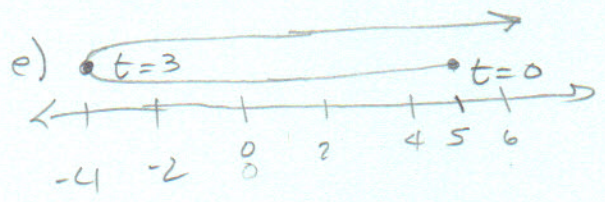
d) $t=0$ $s=2m$ $a=12m/s^2$
 $t=1$ $s=-2m$ $a=6m/s^2$
 $t=3$ $s=2m$ $a=-6m/s^2$



② a/b) $v(t) = 2t - 6$ $a(t) = 2$

c) Left (0, 3), Rt (3, ∞)

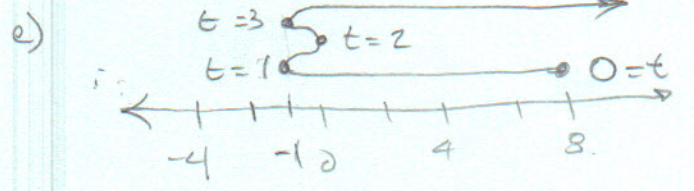
d) $t=0$ $s=5m$ $a=2m/sec^2$
 $t=3$ $s=-4m$ $a=2m/sec^2$



⑤ a/b) $v = (t-2) [4t^2 - 16t + 12]$
 $a = 12t^2 - 48t + 44$

c) Left (0, 1) U (2, 3)
 Rt (1, 2) U (3, ∞)

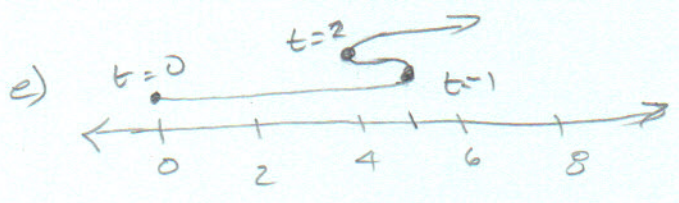
d) $t=0$ $s=8m$ $a=44m/s^2$
 $t=1$ $s=-1m$ $a=8m/s^2$
 $t=2$ $s=0m$ $a=4m/s^2$



③ a/b) $v = 6t^2 - 18t + 12$
 $a = 12t - 18$

c) Left (1, 2), Rt (0, 1) U (2, ∞)

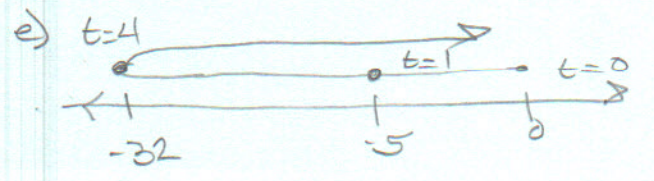
d) $t=0$ $s=0m$ $a=-18m/sec^2$
 $t=1$ $s=5m$ $a=-6m/sec^2$
 $t=2$ $s=4m$ $a=6m/sec^2$



⑥ a/b) $v = 4t^3 - 24t^2 + 36t - 16$
 $a = 12t^2 - 48t + 36$

c) Left (0, 1) U (1, 4) Rt (4, ∞)

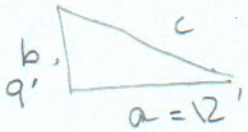
d) $t=0$ $s=0m$ $a=36m/s^2$
 $t=1$ $s=-5m$ $a=0m/s^2$
 $t=4$ $s=-32m$ $a=36m/s^2$



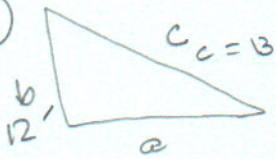
$$7.) \frac{dA}{dt} = 12\pi \text{ ft}^2/\text{sec}$$

$$8.) \frac{dr}{dt} = \frac{1}{8\pi} \text{ in}/\text{sec}$$

$$9.) \frac{da}{dt} = -7.5 \text{ ft}/\text{sec}$$



$$10.) \frac{db}{dt} = -\frac{5}{3} \text{ ft}/\text{min}$$



$$\frac{db}{dt} = -\frac{48}{5} \text{ ft}/\text{min}$$

$$11.) A = \pi r^2$$

$$\frac{dA}{dt} = 2\pi r \frac{dr}{dt}$$

$$\frac{dA}{dt} = C \frac{dr}{dt}$$