Sample Test 3 solutions

① F ② T ③ F, no solution ④ T ⑤ F, $x=0$ ⑥ $(-\frac{2}{3}, \frac{1}{3})$

⑦ 38ft ⑧ 60ft^2 ⑨ 9 hours ⑩ \$96 ⑪ .55 gall

⑫ $t = \frac{4}{c-3}$ ⑬ a) $x=1$ b) no solution c) $78/5$ d) 1 or $-3/2$

e) $x \geq -1$, $[-1, \infty)$ f) $y = 1/4, 3$ g) No solution - you get $r=0$ but doesn't check

h) $a = 0, 5, -5$ i) $r = -2$ ... You get $x=-2$ & $x=-3$ but $x=-3$ doesn't check

j) $(-\frac{1}{2}, \frac{15}{2})$

⑭ a) Find t when $S=320$: $-16t^2+64t+260=320$

$-16t^2+64t-60=0$

$-4(4t^2-16t+15)=0$

$-4(2t-5)(2t-3)=0 \Rightarrow t = \frac{5}{2}$ sec, $\frac{3}{2}$ sec

b) It hits ground when $S=0$ $-16t^2+64t+260=0$

$-4(4t^2-16t-65)=0$

$-4(2t+5)(2t-13)=0 \Rightarrow t = \cancel{-\frac{5}{2}}$ sec, $\frac{13}{2}$ sec

⑮ 20mi →, ← 12 miles } same time to home

let r = rate home

	r	t	dist
~~r+4~~	~~20/(r+4)~~		20
r	12/r		12

Same time: $\frac{20}{r+4} = \frac{12}{r}$

$20r = 12(r+4)$

$20r = 12r+48$

$8r = 48$

$r = 6$

So rate on way to beach is $r+4 = 6+4$ 10mph

⑯ let t = # tens

$2t-1$ = # fives

Amount money = \$115

$10t + 5(2t-1) = 115$

$20t - 5 = 115$

$20t = 120$

$t = 6$ She has 6 tens

⑰ let x = amt invested at 1%

then $6000 - x$ (the rest) is invested at 2%

Amt earned = \$95

$.01x + .02(6000-x) = 95$ mult by 100

$x + 2(6000-x) = 9500$

$-x + 12000 = 9500$

$-x = -2500$

$x = 2500$

\$2500 invested at 1%

\$3500 invested at 2%