1. $\frac{1}{2}g(t-1)^2 = \frac{3}{4} \times \frac{1}{2}gt^2$

$t^2 - 8t + 4 = 0$

$t_1 = 4+2\sqrt{3}\ s$

$t_2 = 4-2\sqrt{3}\ s$

Когда $t = 4+2\sqrt{3}\ s$:

высота: $h = \frac{1}{2}gt^2$

$= \frac{1}{2} \times 10 \times (28+16\sqrt{3})$

$= 140+80\sqrt{3}\ m$

Когда $t = 4-2\sqrt{3}\ s$:

высота: $h = \frac{1}{2}gt^2$

$= \frac{1}{2} \times 10 \times (28-16\sqrt{3})$

$= 140-80\sqrt{3}$

2. a) $x = 3-t^2$

$y = 4t$

$x + \frac{y^2}{16} = 3$

$\Rightarrow y^2 = 48-16x$

б) $V_x = \frac{dx}{dt} = -2t$

$V_y = \frac{dy}{dt} = 4$

когда $t = 2$

$V_x = -4$

$V_y = 4$

$V = \sqrt{V_x^2 + V_y^2} = 4\sqrt{2}$

$a_x = \frac{dV_x}{dt} = 2$

$a_y = \frac{dV}{dt} = 0$

$a = \sqrt{} = 2$