

Correct. First factor out -16 : $-16(t^2 - 400) = 0$

$$-16(t - 20)(t + 20) = 0$$

$$t - 20 = 0 \text{ or } t + 20 = 0$$

$$t = 20 \text{ or } t = -20$$

20 is the solution, because time cannot be negative.