Finding Height of a Projectile

A projectile is launched straight up from ground level with an initial velocity of 288 ft/sec.

$s(t) = -16t^2 + 288t$ $\quad s_0 = 0$ $\quad V_0 = 288$

(a) When will the projectile's height above ground be 1152 ft?

$1152 = -16t^2 + 288t$

$\frac{-16t^2}{-16} + \frac{288t}{-16} - \frac{1152}{-16} = 0$

$t^2 - 18t + 72 = 0$

$(t-12)(t-6) = 0$

$t = 12, 6$

(b) When will the projectile's height above ground be at least 1152 ft?

interval notation $(6, 12)$

$[6, 12]$