

**A ball is thrown straight up into the air with an initial velocity of 142 feet per second and an initial height of 2 feet. What is the velocity of the ball after 4 second(s)?**

If a ball is moving up then  $V = V_0 - gt$  ( $g \approx 32 \text{ feet/sec}^2$ ). Let's find time which a ball needs to be on top.

In the highest point speed of a ball is equal to 0.

$$V_0 - gt = 0, t = \frac{V_0}{g} = \frac{142 \text{ f}}{32 \frac{\text{f}}{\text{s}^2}} \approx 4,4 \text{ sec.}$$

It means, that after 4 seconds our ball will still be moving up.

$$V = V_0 - gt = 142 - 32 \cdot 4 = 14 \text{ feet/sec.}$$

Answer: 14 f/s.