

25. We use  $v = v_0 + at$ , with  $t = 0$  as the instant when the velocity equals  $+9.6 \text{ m/s}$ .

- (a) Since we wish to calculate the velocity for a time *before*  $t = 0$ , we set  $t = -2.5 \text{ s}$ . Thus, Eq. 2-11 gives

$$v = (9.6 \text{ m/s}) + (3.2 \text{ m/s}^2)(-2.5 \text{ s}) = 1.6 \text{ m/s} .$$

- (b) Now,  $t = +2.5 \text{ s}$  and we find

$$v = (9.6 \text{ m/s}) + (3.2 \text{ m/s}^2)(2.5 \text{ s}) = 18 \text{ m/s} .$$