



$$x(t) = 2t^2 - t + 1 \text{ m}$$

at $t = 2 \text{ s}$:

a.) Position: $x(t=2) = 2(2)^2 - 2 + 1$
 $= \underline{7 \text{ m}}$

b.) Velocity: $v_x = \frac{dx}{dt} = \frac{d}{dt} (2t^2 - t + 1)$
 $= \frac{d}{dt} (2t^2) - \frac{d}{dt} (t) + \frac{d}{dt} (1)$
 $= 4t - 1$

c.) Acceleration: $\underline{v_x(t=2) = 7 \text{ m/s}}$

$$a_x = \frac{dv_x}{dt} = \frac{d}{dt} (4t - 1) = 4$$

So: $a_x(t=2) = \underline{4 \text{ m/s}^2}$