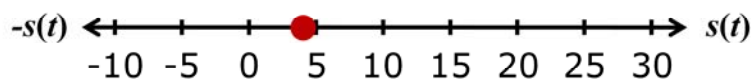A particle moving along a straight line has a **position** (*s*) as a function of **time** (*t*) given by

$$s(t) = t^3 - 10t + 4$$

$-s(t)$ ←——————●——————→ $s(t)$
-10 -5   0   5   10 15 20 25 30

Determine the **velocity** and **acceleration** as a function of **time** (*t*).

ME 231: Dynamics

v = ds/dt = 3t^2 – 10

a = dv/dt = 6t