**1.** A rocket is launching, and its height $h$ in meters is a function of $t$ in seconds (so we are considering the function $h(t)$). Explain what $h'(10) = 1035$ means in language your parents could understand. You answer must include units.

Compute derivatives of the following functions using derivative rules.

**2.** $f(t) = \sqrt{t}e^t$

**3.** $f(t) = e^{-t}$

**4.** $f(t) = e^{2t}$

**5.** $f(v) = \left(1 + \frac{1}{v}\right)\left(2 - \frac{1}{v}\right)$

**6.** $f(x) = \frac{e^{2x}}{1 - e^{x}}$

**7.** $f(x) = \dfrac{\sin(x)}{\cos(x)}$

**8.** $f(x) = e^{2x}\sin(x)$

**9.** $f(x) = (1+x^2)e^x\sin(x)$