



2. [10 points] Evaluate the limits below. If you use L'Hopital's Rule, demonstrate this by identifying the form of the limit and with an  $h$  over the equal sign.

a.  $\lim_{\theta \rightarrow 0} \frac{2\theta}{\sin(\theta)} =$

b.  $\lim_{x \rightarrow 0^+} x \ln(x) =$

c.  $\lim_{x \rightarrow 0} \frac{x^3}{1 + \cos(x)} =$

3. [6 points] Evaluate the integrals below and **check** that your answer is correct.

a.  $\int (5 + \sin(x)) dx =$

b.  $\int 4x^{1/3} - \sec^2(x) dx =$