Worksheet 5
10/6/2022

1. Find the following limits

   (a)
   $$\lim_{x \to -1} (x^4 - 3x)(x^2 + 5x + 3)$$

   (b)
   $$\lim_{x \to 0^-} \frac{\cos^4 x}{5 + 2x^3}$$

   (c)
   $$\lim_{x \to 5} \frac{x^2 - 5x + 6}{x - 5}$$

   (d)
   $$\lim_{x \to 2} \frac{\sqrt{x + 2} - 2}{x - 2}$$

   (e)
   $$\lim_{x \to \pi} \sin(x) \sin\left(\frac{1}{x - \pi}\right)$$

2. Find the slope of the tangent line to the hyperbola $y = \frac{1}{x}$ at the point $(2, \frac{1}{2})$.