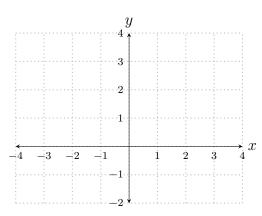
1.
$$\lim_{x \to 2} \frac{7\sin(x-2)}{3x-6} =$$

$$2. \lim_{x \to \pi} \cos \left(\frac{x^2 - \pi^2}{8(x - \pi)} \right) =$$

- 3. A piecewise function f is given below, where the number k is a constant.
 - (a) Find the value of k for which f is continuous on (-4, 4).
 - (b) Sketch the graph of this continuous function.

$$f(x) = \begin{cases} -x & \text{if } x < 1\\ x + k & \text{if } x \ge 1 \end{cases}$$



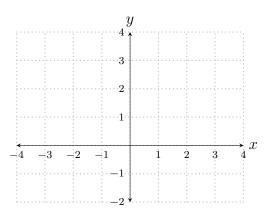
4. State the Intermediate Value Theorem.

$$1. \lim_{x \to 0} \frac{\sin(x^2)}{x} =$$

$$2. \lim_{x \to \sqrt{2}} \tan \left(\frac{\pi \log_2(x)}{2} \right) =$$

- 3. A piecewise function f is given below, where the number k is a constant.
 - (a) Find the value of k for which f is continuous on (-4,4).
 - (b) Sketch the graph of this continuous function.

$$f(x) = \begin{cases} x+k & \text{if } x < -1\\ x^2 & \text{if } x \ge -1 \end{cases}$$



4. State the Intermediate Value Theorem.