

Calculus Warm Up

Day after 2.3

Find the limits.

1. $\lim_{x \rightarrow 2} \frac{x-2}{x^2-4} =$

2. $\lim_{x \rightarrow 0} \frac{\sin 2x}{x} =$

Find the power function (end behavior model).

3. $y = \frac{3x^2 - 5x + x^5}{3x^4 + 1}$

4. $y = 7x^3 - 3x + 5$

Find the limits.

5. $\lim_{x \rightarrow \infty} \left(2 - \frac{x}{x+1} \right) \left(\frac{x^2}{5+x^2} \right)$

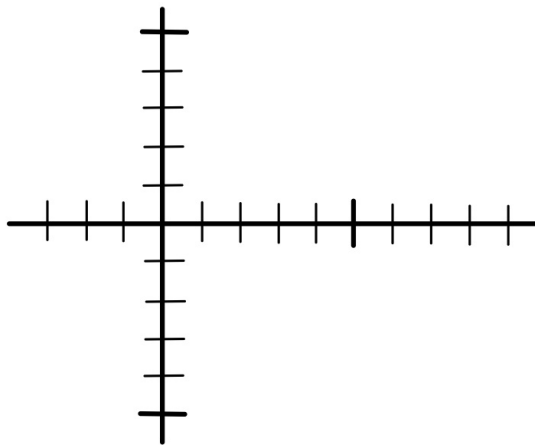
6. $\lim_{x \rightarrow -\infty} 4xe^x$

Draw a function $f(x)$ with the following properties:

a) $\lim_{x \rightarrow 5^+} f(x) = 3$

b) $\lim_{x \rightarrow 5^-} f(x) = -2$

c) $f(5) = 1$



Calculus Warm Up

Day after 2.3

Find the limits.

$$1. \lim_{x \rightarrow 2} \frac{x-2}{x^2-4} = \lim_{x \rightarrow 2} \frac{1}{x+2} = \frac{1}{2+2} = \frac{1}{4}$$

$$2. \lim_{x \rightarrow 0} \frac{\sin 2x}{x} = \lim_{x \rightarrow 0} 2 \frac{\sin x}{x} \cos x = 2 \cdot 1 \cdot 1 = 2$$

Find the power function (end behavior model).

$$3. y = \frac{3x^2 - 5x + x^5}{3x^4 + 1}$$

$$y = \frac{x}{3} = \frac{1}{3}x$$

$$4. y = 7x^3 - 3x + 5$$

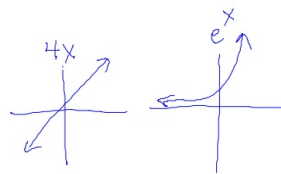
$$y = 7x^3$$

Find the limits.

$$5. \lim_{x \rightarrow \infty} \left(2 - \frac{x}{x+1} \right) \left(\frac{x^2}{5+x^2} \right)$$

$$= (2-1)(1) = 1$$

$$6. \lim_{x \rightarrow \infty} \frac{4xe^x}{- \infty \cdot 0} = 0$$

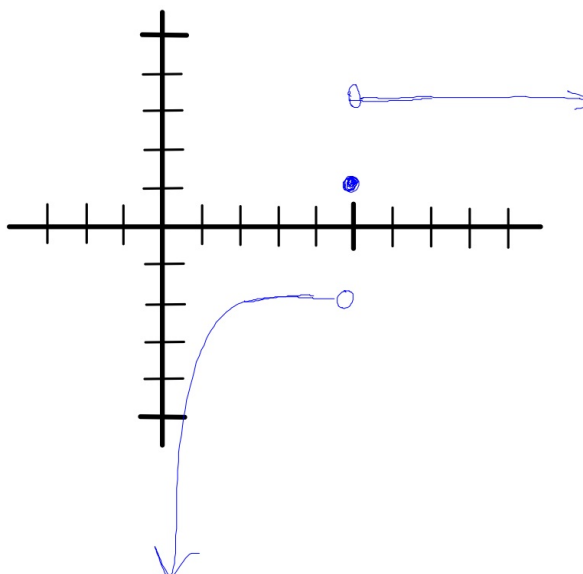


Draw a function $f(x)$ with the following properties:

a) $\lim_{x \rightarrow 5^+} f(x) = 3$

b) $\lim_{x \rightarrow 5^-} f(x) = -2$

c) $f(5) = 1$



OR

Draw a function $f(x)$ with the following properties:

a) $\lim_{x \rightarrow 5^+} f(x) = 3$

b) $\lim_{x \rightarrow 5^-} f(x) = -2$

c) $f(5) = 1$

