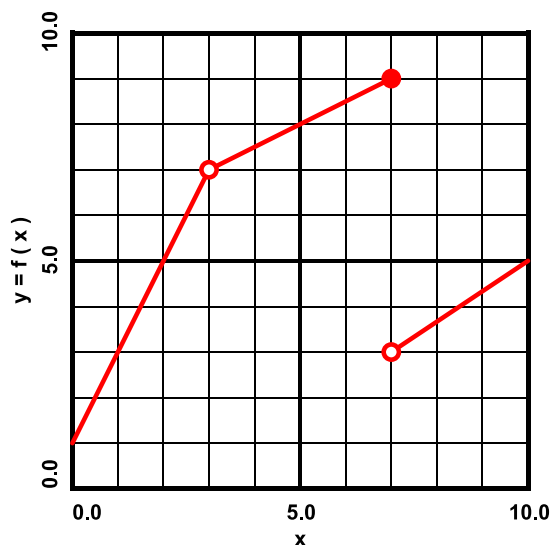


1)

$$\lim_{x \rightarrow 0} \frac{(x+5)^2 - 25}{x} = ?$$

2)

$$\lim_{x \rightarrow 4} \frac{x^3 - 64}{x - 4} = ?$$

3) For $y = f(x)$ as shown

calculate $\lim_{x \rightarrow a^-} f(x)$, $\lim_{x \rightarrow a^+} f(x)$ and $\lim_{x \rightarrow a} f(x)$
for

a) $a = 3$ b) $a = 7$

4) a)

$$\lim_{x \rightarrow 0} \cos\left(\frac{2\pi}{x^2}\right) = ?$$

b)

$$\lim_{x \rightarrow 0} x^2 \cos\left(\frac{2\pi}{x^2}\right) = ?$$

5) Calculate $\lim_{x \rightarrow 1^-} f(x)$, $\lim_{x \rightarrow 1^+} f(x)$ and $\lim_{x \rightarrow 1} f(x)$
for

a)

$$f(x) = \frac{1}{(x-1)^2}$$

b)

$$f(x) = \frac{1}{(x-1)^3}$$

For problems 6 and 7 find the horizontal asymptote of $y = f(x)$.

6)

$$f(x) = \frac{3x^5 + 7x^4}{6x^6 + 3x^5}$$

7)

$$f(x) = \frac{3x^5 + 7x^4}{6x^5 + 3x^4}$$

8) Find the vertical asymptote of

$$f(x) = \frac{x-7}{2x^2 - x - 21}.$$

9) Find the end-behavior function for

$$f(x) = \frac{3x^3 - 8x^2 + 2x - 9}{x^2 + 3x - 4}.$$

10)

$$\lim_{x \rightarrow \infty} \frac{x^5 + \log x}{x^7 + \ln x} = ?$$

11) For $f(x) = \ln|x| - e^x$ calculate

a)

$$\lim_{x \rightarrow -\infty} f(x)$$

b) the left end-behavior function

c)

$$\lim_{x \rightarrow \infty} f(x)$$

d) the right end-behavior function.