MCS21 Homework 6
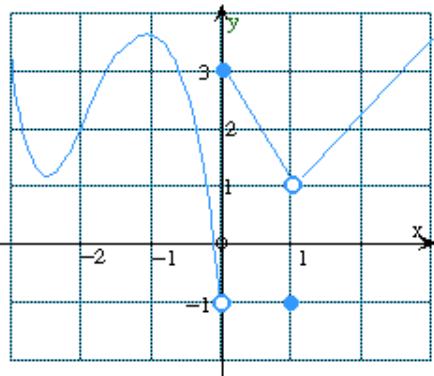
1. For the function f graphed below, find:

   a. $\lim\limits_{x \to 0} f(x) =$

   b. $\lim\limits_{x \to 0^+} f(x) =$

   c. $\lim\limits_{x \to 0^-} f(x) =$

   d. $\lim\limits_{x \to 1} f(x) =$

   e. $\lim\limits_{x \to \infty} f(x) =$

   f. $\lim\limits_{x \to -2} f(x) =$

2. $\lim\limits_{x \to 4} \dfrac{\frac{2}{x-3} - \frac{8}{x}}{x - 4} =$

3. $\lim\limits_{x \to \infty} \dfrac{\sqrt{4x^2 + 17x + 3}}{7 - 9x} =$

4. $\lim\limits_{x \to -\infty} \dfrac{\sqrt{4x^2 + 17x + 3}}{7 - 9x} =$

5. $\lim\limits_{x \to -\infty} \dfrac{5 + 7x}{\sqrt{5 + 7x^2}} =$

6. $\lim\limits_{x \to \infty} \dfrac{\sqrt{x^5 + 4x^7}}{\sqrt{2x^7 + 8x^5 + 7x^3}} =$

7. $\lim\limits_{x \to 0} \dfrac{x}{|x|} =$

8. $\lim\limits_{x \to 0^-} \dfrac{x}{|x|} =$

9. $\lim\limits_{x \to 0^+} \dfrac{x}{|x|} =$

10. $\lim\limits_{x \to 0} \pi^2 =$