Paul's Online Notes

Section 2.7 : Limits At Infinity, Part I - Practice Problems

1. For $f(x) = 4x^7 - 18x^3 + 9$ evaluate each of the following limits.

(a) $\lim_{x \to -\infty} f(x)$ **(b)** $\lim_{x \to \infty} f(x)$

[Solution]

2. For $h(t) = \sqrt[3]{t} + 12t - 2t^2$ evaluate each of the following limits.

(a) $\lim_{t \to -\infty} h(t)$ **(b)** $\lim_{t \to \infty} h(t)$

[Solution]

For problems 3 – 10 answer each of the following questions.

(a) Evaluate $\lim_{x \to -\infty} f(x)$

(b) Evaluate $\lim_{x \to \infty} f(x)$

(c) Write down the equation(s) of any horizontal asymptotes for the function.

3. $f(x) = \dfrac{8 - 4x^2}{9x^2 + 5x}$ [Solution]

4. $f(x) = \dfrac{3x^7 - 4x^2 + 1}{5 - 10x^2}$ [Solution]

5. $f(x) = \dfrac{20x^4 - 7x^3}{2x + 9x^2 + 5x^4}$ [Solution]

6. $f(x) = \dfrac{x^3 - 2x + 11}{3 - 6x^5}$ [Solution]

7. $f(x) = \dfrac{x^6 - x^4 + x^2 - 1}{7x^6 + 4x^3 + 10}$ **[Solution]**

8. $f(x) = \dfrac{\sqrt{7 + 9x^2}}{1 - 2x}$ **[Solution]**

9. $f(x) = \dfrac{x + 8}{\sqrt{2x^2 + 3}}$ **[Solution]**

10. $f(x) = \dfrac{8 + x - 4x^2}{\sqrt{6 + x^2 + 7x^4}}$ **[Solution]**

© 2003 - 2023 Paul Dawkins Page Last Modified : 11/16/2022