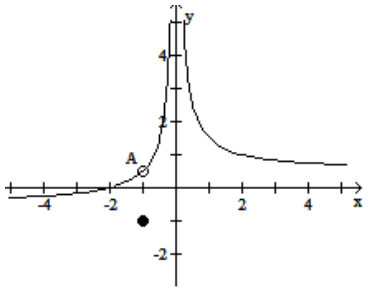
Drill_Limits and Asymptotes

Use the graph of $f(x)$ to evaluate the limits.

1 .



a. $\lim_{x\to -1} f(x) =$

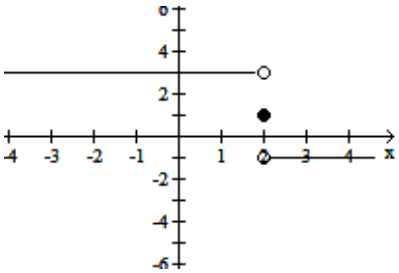
b. $\lim_{x\to 0} f(x) =$

c. $\lim_{x\to \infty} f(x) =$

d. $f(-1) =$

e. $\lim_{x\to -2} f(x) =$

2.



a. $\lim_{x\to 2^+} f(x) =$

b. $\lim_{x\to 2^-} f(x) =$

c. $\lim_{x\to 2} f(x) =$

d. $\lim_{x\to -\infty} f(x) =$

e. $f(2) =$

3. Use the table to estimate the $\lim_{x\to 4} f(x)$.

x	3.9	3.99	3.999	4.001	4.01	4.1
f(x)	3.97484	3.99750	3.99975	4.00025	4.00250	4.02485

Evaluate the limit analytically.

4. $\lim_{x\to 10} \frac{x-3}{x-10}$

5. $\lim_{x\to 2} \frac{x+3}{x-10}$

6. $\lim_{x\to -4} \frac{x+4}{x^2-16}$

7. $\lim_{x\to 25} \frac{\sqrt{x}-5}{x-25}$

8. $\lim_{x\to -6} \frac{x^2+6x}{x^2+x-30}$

9. $\lim_{x\to \infty} 12$

10. $\lim_{x\to -\infty} \frac{7x^2-3}{x-10}$

11. $\lim_{x\to -\infty} \frac{12x^2-4x+3}{x^5-3x^2+8x}$

12. $\lim_{x\to \infty} \frac{15x^4-2x^2+9}{3x^4+2x^3-7x}$

Write an equation for each vertical and horizontal asymptote for given function.

13. $f(x) = \frac{3x+5}{x-2}$

Vertical: Horizontal:

14. $f(x) = \frac{x-5}{x^2-25}$

Vertical: Horizontal: