AP Calculus
Chapter 1 Review Key

1. Answer each of the following questions for $g(x)=\dfrac{\cos x}{3x^2-5x}$.

   a) $\lim\limits_{x\to 0^+} g(x)=-\infty$

   b) $\lim\limits_{x\to 0^-} g(x)=\infty$

   c) $\lim\limits_{x\to 0} g(x)=\text{DNE}$

   d) $g(0)=\text{DNE}$

   e) $\lim\limits_{x\to \pi} g(x)=\text{-0.072}$

2. Evaluate each of the following limits. Do not use a calculator.

   a) $\lim\limits_{x\to 3}\dfrac{3x^2-8x-3}{x-3}=10$

   b) $\lim\limits_{x\to 3}\dfrac{x-3}{3x^2-8x-3}=0.1$

   c) $\lim\limits_{x\to 2^+}\dfrac{5}{x-2}=\infty$

   d) $\lim\limits_{x\to 3/4^-}\dfrac{-7}{3-4x}=-\infty$

3. Use the graph to answer each question.

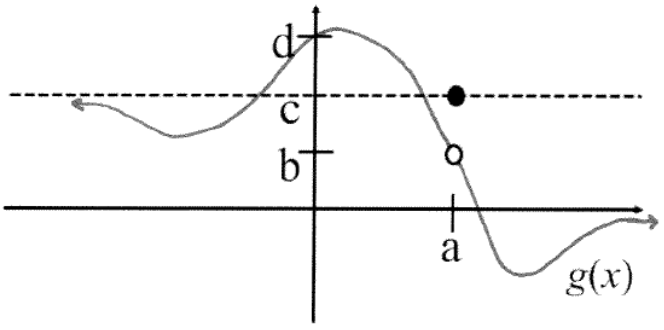
   a) $\lim\limits_{x\to\infty} g(x)=0$

   b) $\lim\limits_{x\to-\infty} g(x)=\text{c}$

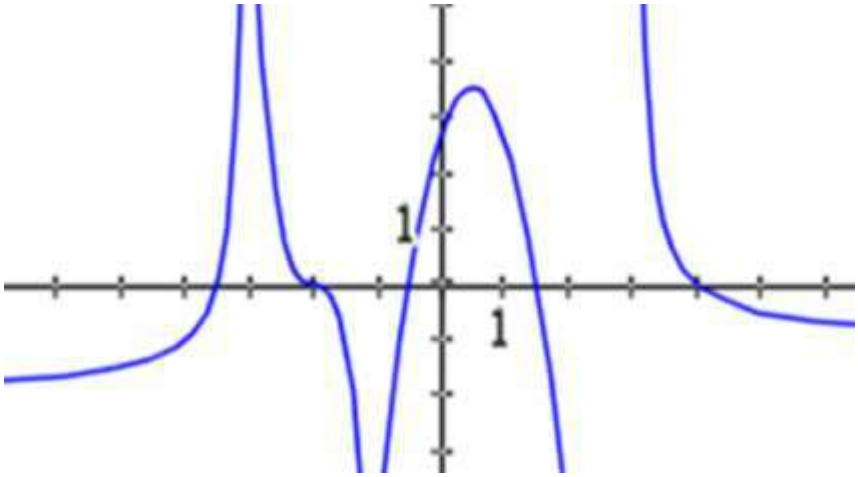
   c) $\lim\limits_{x\to a^+} g(x)=\text{b}$

   d) $\lim\limits_{x\to a^-} g(x)=\text{b}$

   e) $g(a)=\text{c}$



4. Use the graph of $g(x)$ to answer each question.



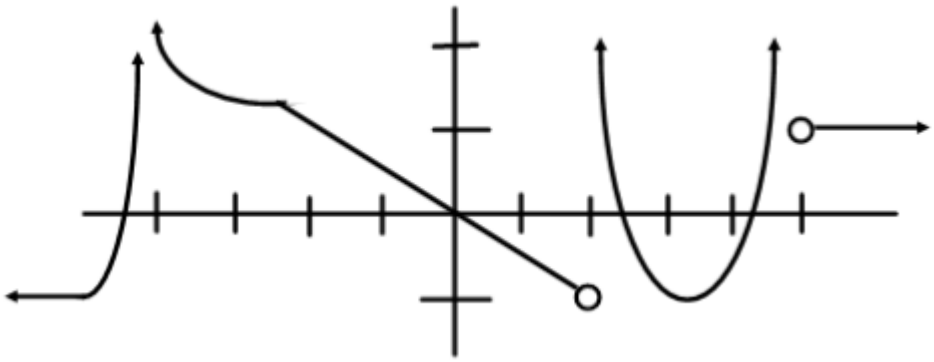
a) $\lim_{x\to\infty} g(x) = -1$ b) $\lim_{x\to-\infty} g(x) = -2$ c) $\lim_{x\to-3^+} g(x) = \infty$ d) $\lim_{x\to-3^-} g(x) = \infty$

e) $\lim_{x\to-3} g(x) = \infty$ f) $\lim_{x\to-1^+} g(x) = -\infty$ g) $\lim_{x\to-1^-} g(x) = -\infty$ h) $\lim_{x\to-1} g(x) = -\infty$

i) $\lim_{x\to2^-} g(x) = -\infty$ j) $\lim_{x\to3} g(x) = DNE$ k) $g(-3) = DNE$ l) $g(-2) = 0$

m) $g(0) = 3$ n) $\lim_{x\to0} g(x) = 3$

5. Use the graph of $h(x)$ to answer each question.



a) $\lim_{x\to\infty} h(x) = 1$ b) $\lim_{x\to-\infty} h(x) = -1$ c) $\lim_{x\to-4^+} h(x) = \infty$ d) $\lim_{x\to-4^-} h(x) = \infty$

e) $\lim_{x\to-4} g(x) = \infty$ f) $\lim_{x\to2^+} h(x) = \infty$ g) $\lim_{x\to2^-} h(x) = -1$ h) $\lim_{x\to2} h(x) = DNE$

i) $\lim_{x\to3} h(x) = -1$ j) $\lim_{x\to4} h(x) = -0.5$ k) $h(-4) = DNE$ l) $h(2) = DNE$

m) $h(0) = 0$ n) $\lim_{x\to0} h(x) = 0$