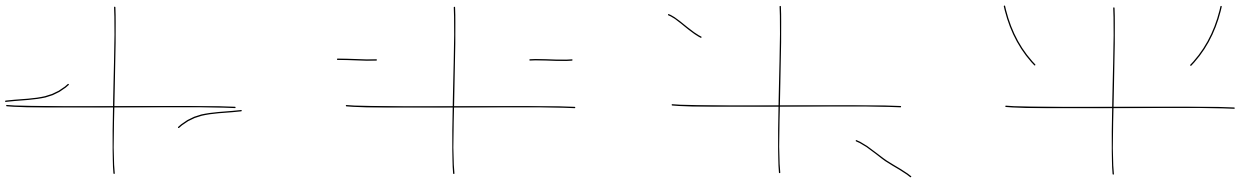
Quiz 1

1. Let $g(x) = \dfrac{2x^3 + x^5}{x^2 + 3}$. Approximate $g(0.01)$.

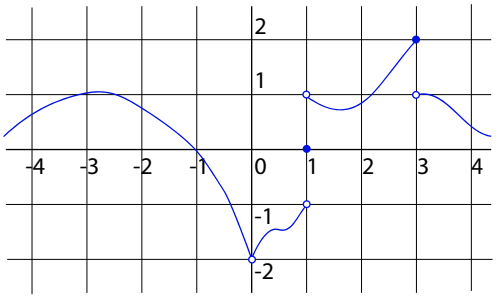
   (A) $2(0.01)$ (B) $(0.01)^5/3$ (C) $(0.01)^3$ (D) $\frac{2}{3}(0.01)^3$ (E) $2/3$

2. Let $g(x) = \dfrac{x^3 + 3x}{2x - x^2}$. Which of the following represents the graph of $g(x)$ for $|x|$ large?



(A) (B) (C) (D)

Using the graph of the function below, determine the limits given in 3, 4 and 5.



3. $\lim_{x\to 1} f(x)$

   (A) -1 (B) 0 (C) 1 (D) DNE (E) none of the above

4. $\lim_{x\to 3^-} f(x)$

   (A) 1 (B) 2 (C) 3 (D) DNE (E) none of the above

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

   (A) -1 (B) 0 (C) 2 (D) DNE (E) none of the above

6. Which of the following describes the derivative of a function $f(x)$ at $x = a$?

   (A) It is the slope of the line we see when we zoom into the graph of $f(x)$ at $x = a$.

   (B) It is defined as the limit of the secant line between a and $a + h$ as $h \to 0$.

   (C) It is the average rate of change of $f(x)$ over the interval $0 < x < h$.

   (D) More than one of the above answers are correct.

   (E) None of the above are correct.