Quiz 1.7

Name

1. If f is the function defined by $f(x) = \frac{x^2-1}{\sqrt{x}-1}$, then $\lim_{x \to 1} f(x)$ is

(A) 4

(B) 2

(C) 0

(D) nonexistent

2. If g is the function defined by $g(x) = \frac{2\cos^2 x - 1}{\cos x - \sin x}$, then $\lim_{x \to \frac{\pi}{4}} g(x)$ is equivalent to which of the following?

(A) $\lim_{x \to \frac{\pi}{4}} (2\cos^2 x - 1)$

(B) $\lim_{x \to \frac{\pi}{4}} (\cos x + \sin x)$

(C) $\lim_{x \to \frac{\pi}{4}} (\cos x - \sin x)$

(D) $\frac{\lim_{x \to \frac{\pi}{4}} (2\cos^2 x - 1)}{\lim_{x \to \frac{\pi}{4}} (\cos x - \sin x)}$

3. $f(x) = \begin{cases} \frac{(x-1)^2(x+1)}{|x-1|} & \text{for} \quad x \neq 1 \\ 2 & \text{for} \quad x = 1 \end{cases}$

If f is the function defined above, then $\lim_{x \to 1} f(x)$ is

Quiz 1.7

(A) 0

(B) 1

(C) 2

(D) nonexistent