Quiz 1.10

Name

1. Let f be the function defined by $f(x) = \frac{x^4 - 4x^2}{x^2 - 4x}$. Which of the following statements is true?

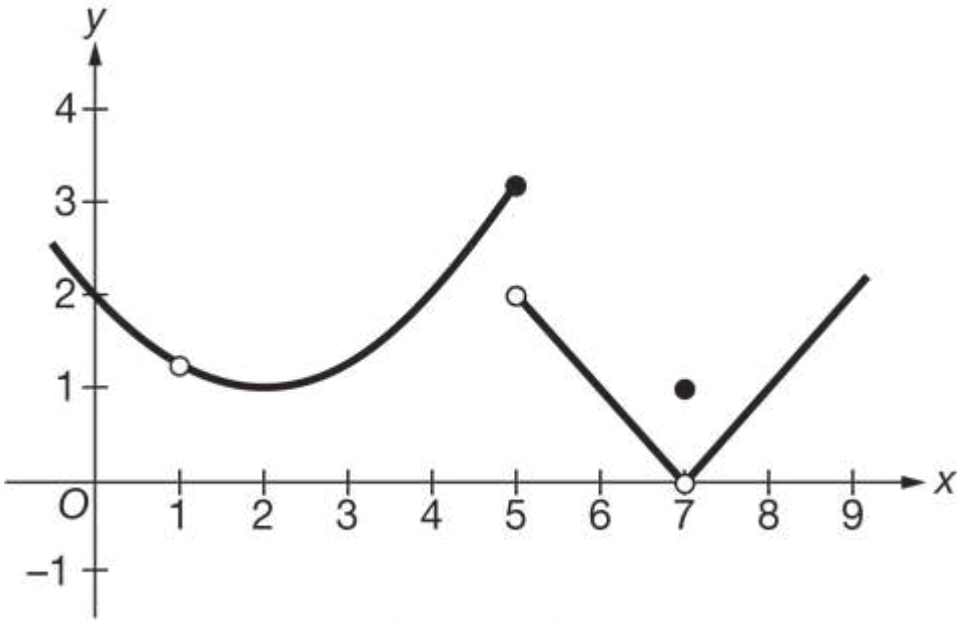
(A) f has a discontinuity due to a vertical asymptote at $x = 0$ and at $x = 4$.

(B) f has a removable discontinuity at $x = 0$ and a jump discontinuity at $x = 4$.

(C) f has a removable discontinuity at $x = 0$ and a discontinuity due to a vertical asymptote at $x = 4$.

(D) f is continuous at $x = 0$, and f has a discontinuity due to a vertical asymptote at $x = 4$.

2.



Graph of f

The graph of the function f is shown above. What are all values of x for which f has a removable discontinuity?

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A 1 only

B 5 only

C 1 and 7 only

D 1, 5, and 7

3. Let f be the function defined by $f(x) = \frac{x^3 - 9x}{x^3 + x^2 - 8x - 12}$. Which of the following statements about f at $x = -2$ and $x = 3$ is true?

A f has a jump discontinuity at $x = -2$, and f is continuous at $x = 3$.

B f has a jump discontinuity at $x = -2$, and f has a removable discontinuity at $x = 3$.

C f has a discontinuity due to a vertical asymptote at $x = -2$, and f is continuous at $x = 3$.

D f has a discontinuity due to a vertical asymptote at $x = -2$, and f has a removable discontinuity at $x = 3$.