Choose the correct answer in each of the following:

Section 2.5+2.6:

1. If $f(x) = \begin{cases} \dfrac{3x-3}{x^2+x-2} & \text{if } x > 1 \\ 2x^2 - x & \text{if } x \leq 1 \end{cases}$, then $f(x)$ is

(**a**) discontinuous at $x = 1$

(**b**) continuous at $x = 1$

(**c**) discontinuous from the left at $x = 1$

(**d**) discontinuous from the right at $x = 1$.

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2. $\lim\limits_{x \to 1^-} \sqrt{1-x} =$

(**a**) 1

(**b**) -1
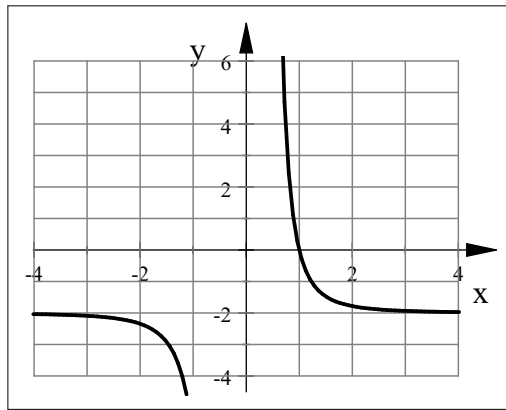
(**c**) 0

(**d**) Does not exist

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3. The function $f(x) = \sqrt{1-x}$ is

(**a**) continuous at $x = 1$.

(**b**) continuous from the left at $x = 1$.

(**c**) continuous from the right at $x = 1$.

(**d**) continuous on $\mathbb{R}$.

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4. The function $f(x) = \dfrac{3\cos x}{x-1}$ is discontinuous

(**a**) at $x = -1$

(**b**) at $x = 1$

(**c**) at $x = 0$

(**d**) at $x = -1, x = 1$

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5. The horizontal asymptote(s) of the function $f(x)$ whose graph is given is (are)

(a) $y = -2$

(b) $y = -1$

(c) $x = 0, x = -1$

(d) $x = -2$

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6. The horizontal asymptote(s) of the function $f(x) = \dfrac{\sqrt{4x^2 + 4x} - 1}{2x + 1}$ is (are)

(a) $y = -1. y = 1$

(b) $y = 2$

(c) $x = -1, x = 1$

(d) $x = 2$

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7. The horizontal asymptote of the function $f(x) = e^x + 5$ is

(a) $x = 5$

(b) $y = 0$

(c) $x = -5$

(d) $y = 5$

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answers: **1-b, 2-c, 3-b, 4-b, 5-a, 6-a, 7-d,.**