Choose the correct answer in each of the following:

Section 2.7+2.8:

1. If $f(x) = \sin(x)$, then $f'(x) =$

(a) $\displaystyle\lim_{h\to 0} \frac{\sin(x+h) - \sin(x)}{h}$

(b) $\displaystyle\lim_{h\to 0} \frac{\sin(x) - \sin(x+h)}{h}$

(c) $\displaystyle\lim_{h\to 0} \frac{\sin(x+h) + \sin(x)}{h}$

(d) $\displaystyle\lim_{h\to 0}$

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2. The function $f(x) = |x + 2|$ is not differentiable at

(a) 2

(b) −2

(c) 0

(d) 4

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3. The function $y = \sqrt{x - 2}$ is not differentiable at $x = 2$ is

(a) True

(b) False

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4. If a function $f(x)$ is not differentiable at c, then $f(x)$ is discontinuous at c.

(a) True

(b) False

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5. The function $f(x) = |x - 3|$ is

(**a**) differentiable at $x = 3$

(**b**) continuous at $x = 3$

(**c**) differentiable and continuous at $x = 3$

(**d**) niether differentiable nor continuous at $x = 3$

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answers: **1-a**, **2-b**, **3-a**, **4-b**, **5-b**.