ILLINOIS PRECALCULUS · UNIT 1 · 10 QUESTIONS

Functions and Transformations — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The graph of y = 3f(x) is the graph of y = f(x) stretched**

- A horizontally by a factor of 3
- B vertically by a factor of 3
- C vertically by a factor of 1
- D shifted up 3 units

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2 **The vertex of $y = -x^2 + 4x - 3$ is**



A (2, 1)

B (-2, 1)

C (2, -1)

D (4, -3)

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3 **For the piecewise function f(x) = 2x if x < 3 and f(x) = x + 4 if x ≥ 3, the value of f(5) is**

- A 10
- B 9
- C 7
- D 8

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4 **The average rate of change of f(x) = 2x + 1 from x = 1 to x = 4 is ____.**

ANSWER _____

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5 **If f(x) = |x - 2|, then f(-3) is ____.**

ANSWER _____

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6 **The function $f(x) = x^4 + 2x^2$ is**

- A odd
- B neither even nor odd
- C linear
- D even

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7 **The range of $f(x) = -x^2 + 6$ is**

- A $y \geq 6$
- B $y \leq 6$
- C $y \geq -6$
- D $y > 6$

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8 **The graph of y = f(x) + 5 is the graph of y = f(x) shifted**



A 5 units down

B 5 units right

C 5 units up

D 5 units left

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9 If $f(x) = x^2 - 4x$, then $f(6) - f(2)$ is

- A 8
- B 12
- C 20
- D 16

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10 The x-intercept of $f(x) = 2x + 10$ is ____.

ANSWER _____

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ANSWER KEY

1. B
2. A
3. B
4. 2
5. 5
6. D
7. B
8. C
9. D
10. -5

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