ILLINOIS ALGEBRA 2 · UNIT 1 · 10 QUESTIONS

Functions and Graphs — Practice Test

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1 **Let f(x) = x + 1 for x < 2 and f(x) = 2x - 3 for x ≥ 2. The value of f(2) is**

ANSWER _____

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2 **The inverse of f(x) = 5x - 10 is**

A $f^{-1}(x) = \frac{x + 10}{5}$

B $f^{-1}(x) = 5x + 10$

C $f^{-1}(x) = \frac{x}{5} - 10$

D $f^{-1}(x) = \frac{x - 10}{5}$

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3 The point (6, 3) lies on the graph of y = f(x). The image of this point on the graph of y = f(2x) is

- A (6, 6)
- B (3, 6)
- C (12, 3)
- D (3, 3)

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4 The average rate of change of f(x) = 3x + 2 on the interval 0 ≤ x ≤ 5 is

- A 17
- B 2
- C 3
- D 5

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5 **The graph below shows y = 2x + 1. The y-intercept of the graph is**

- A 1
- B 2
- C -1
- D 0

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

- A even
- B neither even nor odd
- C both even and odd
- D odd

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7 The vertex of $y = |x + 1| - 2$ is

- A (-1, -2)
- B (1, 2)
- C (1, -2)
- D (-1, 2)

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8 The domain of $f(x) = \sqrt{4 - x}$ is

- A $x < 4$
- B $x \geq 4$
- C $x \leq 4$
- D $x > 4$

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9 **The larger solution of $|2x - 1| = 5$ is**

- **A** 2
- **B** -2
- **C** 3
- **D** -3

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10 **If $f(x) = x^2 - 2x$, then an expression for $f(a + 1)$ is**

- **A** $a^2 + 1$
- **B** $a^2 - 2a - 1$
- **C** $a^2 + 2a + 1$
- **D** $a^2 - 1$

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ANSWER KEY

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

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