MINNESOTA ALGEBRA 2 · UNIT 1 · 25 QUESTIONS

Functions and Graphs — 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 **If f(x) = 2x + 3, then f(4) is**

Question 1

If $f(x) = 2x + 3$, then $f(4)$ is

A) 9 B) 11

C) 10 D) 12

- **A** 9
- **B** 11
- **C** 10
- **D** 12

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2 If g(x) = x² - 5x + 6, then g(3) is

Question 2

If $g(x) = x^2 - 5x + 6$, then $g(3)$ is

A) 3

B) −3

C) 6

D) 0

A 3

B -3

C 6

D 0

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3 If f(x) = 3x - 7, then f(-2) is

Question 3

If $f(x) = 3x - 7$, then $f(-2)$ is

A) -13

B) 13

C) 1

D) -1

A -13

B 13

C 1

D -1

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4 The domain of f(x) = $\sqrt{x - 5}$ is

Question 4

The domain of $f(x) = \sqrt{x - 5}$ is

A) all real numbers

B) $x > 5$

C) $x \geq 5$

D) $x \leq 5$

A all real numbers

B x > 5

C x ≥ 5

D x ≤ 5

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5 The domain of f(x) = 1/x + 2 is

Question 5

The domain of $f(x)=\frac{1}{x+2}$ is

A) $x \neq -2$

B) all real numbers

C) $x \neq 2$

D) $x \geq -2$

A all real numbers

B x ≠ 2

C x ≠ -2

D x ≥ -2

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6 The range of f(x) = x² - 4 is

Question 6

The range of $f(x) = x^2 - 4$ is

A) $y \leq -4$

B) $y > -4$

C) $y \geq -4$

D) $y \geq 4$

A y ≤ -4

B y > -4

C y ≥ -4

D y ≥ 4

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7

The point (-2, 5) lies on the graph of y = f(x). The image of this point on the graph of y = f(x - 3) + 2 is

Question 7

The point $(-2,\ 5)$ lies on the graph of $y = f(x)$. The image of this point on the graph of $y = f(x - 3) + 2$ is

A) $(1,\ 3)$

B) $(-5,\ 3)$

C) $(1,\ 7)$

D) $(-5,\ 7)$

A (1, 3)

B (-5, 3)

C (1, 7)

D (-5, 7)

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8 The vertex of $y = (x - 3)^2 + 5$ is

Question 8

The vertex of $y = (x - 3)^2 + 5$ is

A) $(-3, -5)$

B) $(-3, 5)$

C) $(3, -5)$

D) $(3, 5)$

- **A** (-3, -5)
- **B** (-3, 5)
- **C** (3, -5)
- **D** (3, 5)

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9 The inverse of f(x) = 3x + 4 is

Question 9

The inverse of $f(x) = 3x + 4$ is

A) $f^{-1}(x) = \frac{x+4}{3}$

B) $f^{-1}(x) = \frac{x-4}{3}$

C) $f^{-1}(x) = 3x - 4$

D) $f^{-1}(x) = \frac{x}{3} + 4$

A $f^{-1}(x) = x + 4/3$

B $f^{-1}(x) = x - 4/3$

C $f^{-1}(x) = 3x - 4$

D $f^{-1}(x) = x/3 + 4$

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10 Given f(x) = 2x + 1 and g(x) = x², the value of (f ° g)(3) is

Question 10

Given $f(x) = 2x + 1$ and $g(x) = x^2$, the value of $(f \circ g)(3)$ is

A) 10

B) 7

C) 37

D) 19

A 10

B 7

C 37

D 19

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11

Given f(x) = x + 3 and g(x) = 2x - 1, the value of (g ° f)(2) is

Question 11

Given $f(x) = x + 3$ and $g(x) = 2x - 1$, the value of $(g \circ f)(2)$ is

A) 9

B) 7

C) 5

D) 11

A 9

B 7

C 5

D 11

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12

Let f(x) = 2x for x < 0 and f(x) = x + 3 for x ≥ 0. The value of f(-2) + f(3) is

Question 12

Let $f(x) = 2x$ for $x < 0$ and $f(x) = x + 3$ for $x \geq 0$. The value of $f(-2) + f(3)$ is

A) 1

B) −2

C) 2

D) 10

A 1

B -2

C 2

D 10

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13 The sum of the solutions of |x - 4| = 3 is

Question 13

The sum of the solutions of $|x - 4| = 3$ is

A) 6

B) 10

C) 8

D) 4

A 6

B 10

C 8

D 4

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14 The average rate of change of f(x) = x² on the interval 1 ≤ x ≤ 4 is

Question 14

The average rate of change of $f(x) = x^2$ on the interval $1 \leq x \leq 4$ is

A) 6

B) 5

C) 15

D) 4

- **A** 6
- **B** 5
- **C** 15
- **D** 4

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15 Which statement about the relation {(1, 2), (2, 3), (1, 4)} is true?

Question 15

Which statement about the relation {(1, 2), (2, 3), (1, 4)} is true?

A) It is a function because it has three pairs

B) It is not a function because 2 has two outputs

C) It is a function because every output is different

D) It is not a function because 1 has two outputs

A It is a function because it has three pairs

B It is not a function because 2 has two outputs

C It is a function because every output is different

D It is not a function because 1 has two outputs

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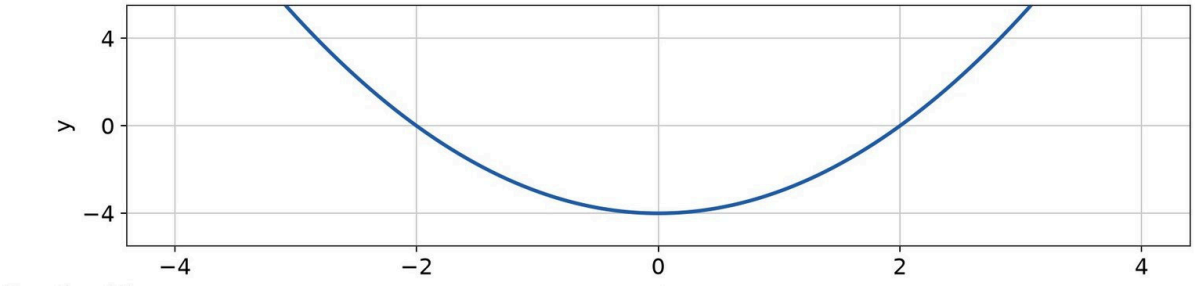
16 **The graph below shows $y = x^2 - 4$. The vertex of the graph is**



A (2, 0)

B (0, 4)

C (0, -4)

D (-4, 0)

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17 The x-intercept of y = 2x - 6 is

Question 17

The x –intercept of $y = 2x - 6$ is

A) –3

B) 6

C) 3

D) –6

A -3

B 6

C 3

D -6

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18 A linear function passes through (0, 3) and (2, 7). Its slope is

Question 18

A linear function passes through (0, 3) and (2, 7). Its slope is

A) 3

B) 2

C) $\frac{1}{2}$

D) 4

A 3

B 2

C 1/2

D 4

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19 The function f(x) = x³ is

Question 19

The function $f(x) = x^3$ is

A) neither even nor odd

B) both even and odd

C) even

D) odd

A neither even nor odd

B both even and odd

C even

D odd

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20 **The point (4, -2) lies on the graph of y = f(x). The corresponding point on the graph of the inverse, $y = f^{-1}(x)$, is**

Question 20

The point $(4, -2)$ lies on the graph of $y = f(x)$. The corresponding point on the graph of the inverse, $y = f^{-1}(x)$, is

A) $(2, -4)$

B) $(4, 2)$

C) $(-2, 4)$

D) $(-4, 2)$

A (2, -4)

B (4, 2)

C (-2, 4)

D (-4, 2)

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21 Compared to the graph of y = f(x), the graph of y = -2f(x) has been

Question 21

Compared to the graph of $y = f(x)$, the graph of $y = -2f(x)$ has been

A) reflected in the x −axis and vertically compressed by a factor of 2

B) reflected in the y −axis and vertically stretched by a factor of 2

C) vertically stretched by a factor of 2 only

D) reflected in the x −axis and vertically stretched by a factor of 2

- **A** reflected in the x-axis and vertically compressed by a factor of 2
- **B** reflected in the y-axis and vertically stretched by a factor of 2
- **C** vertically stretched by a factor of 2 only
- **D** reflected in the x-axis and vertically stretched by a factor of 2

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22 If f(x) = x² + 1, then the positive solution of f(x) = 10 is

Question 22

If $f(x) = x^2 + 1$, then the positive solution of $f(x) = 10$ is

ANSWER

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23 If f(x) = x - 1/x + 2, then f(3) is

Question 23

If $f(x) = \frac{x-1}{x+2}$, then $f(3)$ is

A) $\frac{1}{2}$

B) $\frac{2}{5}$

C) 2

D) $\frac{4}{5}$

A 1/2

B 2/5

C 2

D 4/5

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24 The larger zero of y = x² - 5x + 6 is

Question 24

The larger zero of $y = x^2 - 5x + 6$ is

A) 6

B) 1

C) 2

D) 3

A 6

B 1

C 2

D 3

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25 The domain of y = f(x) is -2 ≤ x ≤ 6. The domain of y = f(x + 2) is

Question 25

The domain of $y = f(x)$ is $-2 \leq x \leq 6$. The domain of $y = f(x + 2)$ is

A) $4 \leq x \leq 12$

B) $-4 \leq x \leq 4$

C) $0 \leq x \leq 8$

D) $-2 \leq x \leq 6$

A 4 ≤ x ≤ 12

B -4 ≤ x ≤ 4

C 0 ≤ x ≤ 8

D -2 ≤ x ≤ 6

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ANSWER KEY

1. B
2. D
3. A
4. C
5. C
6. C
7. C
8. D
9. B
10. D
11. A
12. C
13. C
14. B
15. D
16. C
17. C
18. B
19. D
20. C
21. D
22. 3
23. B
24. D
25. B

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