FUNCTIONS AND TRANSFORMATIONS - PRACTICE TEST | MISSOURI PRECALCULUS · UNIT 1 · 25 QUESTIONS

Functions and Transformations, 25-question test — 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) = x² + 3x - 4, then f(2) is**

Question 1

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

A) 6 B) −2

C) 10 D) 2

- **A** 6
- **B** -2
- **C** 10
- **D** 2

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2 If g(x) = 2x - 5, then g(-3) is

Question 2

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

A) 11

B) -11

C) -1

D) 1

A 11

B -11

C -1

D 1

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

Question 3

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

A) 6

B) 7

C) 10

D) 14

- **A** 6
- **B** 7
- **C** 10
- **D** 14

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4 If f(x) = 3x + 1 and g(x) = x², then g(f(2)) is

Question 4

If $f(x) = 3x + 1$ and $g(x) = x^2$, then $g(f(2))$ is

A) 49

B) 13

C) 36

D) 19

A 49

B 13

C 36

D 19

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

Question 5

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

A) $x \geq 5$

B) $x > 5$

C) $x \leq 5$

D) all real numbers

A x ≥ 5

B x > 5

C x ≤ 5

D all real numbers

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6 The domain of f(x) = 1/x - 4 is

Question 6

The domain of $f(x) = \frac{1}{x-4}$ is

A) all real numbers

B) $x \neq 4$

C) $x \geq 4$

D) $x \neq -4$

A all real numbers

B x ≠ 4

C x ≥ 4

D x ≠ -4

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7 The range of f(x) = x² + 2 is

Question 7

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

A) $y \geq 0$

B) $y > 2$

C) $y \geq 2$

D) $y \leq 2$

A y ≥ 0

B y > 2

C y ≥ 2

D y ≤ 2

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8 The inverse of f(x) = 2x + 6 is

Question 8

The inverse of $f(x) = 2x + 6$ is

A) $f^{-1}(x) = \frac{x-6}{2}$

B) $f^{-1}(x) = \frac{x+6}{2}$

C) $f^{-1}(x) = 2x - 6$

D) $f^{-1}(x) = \frac{x}{2} + 6$

A $f^{-1}(x) = x - 6/2$

B $f^{-1}(x) = x + 6/2$

C $f^{-1}(x) = 2x - 6$

D $f^{-1}(x) = x/2 + 6$

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9 The inverse of f(x) = x/3 - 2 is

Question 9

The inverse of $f(x) = \frac{x}{3} - 2$ is

A) $f^{-1}(x) = 3x - 2$

B) $f^{-1}(x) = \frac{x}{3} + 2$

C) $f^{-1}(x) = 3x + 6$

D) $f^{-1}(x) = 3x - 6$

A $f^{-1}(x) = 3x - 2$

B $f^{-1}(x) = x/3 + 2$

C $f^{-1}(x) = 3x + 6$

D $f^{-1}(x) = 3x - 6$

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10 The function f(x) = x³ - x is

Question 10

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

A) even

B) odd

C) neither even nor odd

D) both even and odd

A even

B odd

C neither even nor odd

D both even and odd

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11 The function f(x) = x² + 5 is

Question 11

The function $f(x) = x^2 + 5$ is

A) odd

B) neither even nor odd

C) even

D) both even and odd

A odd

B neither even nor odd

C even

D both even and odd

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12 The graph of y = (x - 3)² + 1 has vertex

Question 12

The graph of $y = (x - 3)^2 + 1$ has vertex

A) (3, 1)

B) (−3, 1)

C) (3, −1)

D) (−3, −1)

A (3, 1)

B (-3, 1)

C (3, -1)

D (-3, -1)

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13

Compared with $y = x^2$, the graph of $y = -2x^2$ is reflected across the x-axis and

Question 13

Compared with $y = x^2$, the graph of $y = -2x^2$ is reflected across the x −axis and

A) stretched vertically by a factor of 2

B) compressed vertically by a factor of 2

C) shifted up 2 units

D) shifted right 2 units

A stretched vertically by a factor of 2

B compressed vertically by a factor of 2

C shifted up 2 units

D shifted right 2 units

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14 The graph of y = f(x - 4) + 3 is the graph of y = f(x) shifted

Question 14

The graph of $y = f(x - 4) + 3$ is the graph of $y = f(x)$ shifted

A) 4 units left and 3 units down

B) 4 units right and 3 units up

C) 3 units right and 4 units up

D) 4 units left and 3 units up

- **A** 4 units left and 3 units down
- **B** 4 units right and 3 units up
- **C** 3 units right and 4 units up
- **D** 4 units left and 3 units up

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15 The graph of y = f(-x) is the graph of y = f(x) reflected across the

Question 15

The graph of $y = f(-x)$ is the graph of $y = f(x)$ reflected across the

A) x −axis

B) line $y = x$

C) y −axis

D) origin

A x-axis

B line y = x

C y-axis

D origin

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16 If f(x) = x² and g(x) = f(x + 2), then g(-1) is

Question 16

If $f(x) = x^2$ and $g(x) = f(x + 2)$, then $g(-1)$ is

A) 9

B) 4

C) 1

D) 3

A 9

B 4

C 1

D 3

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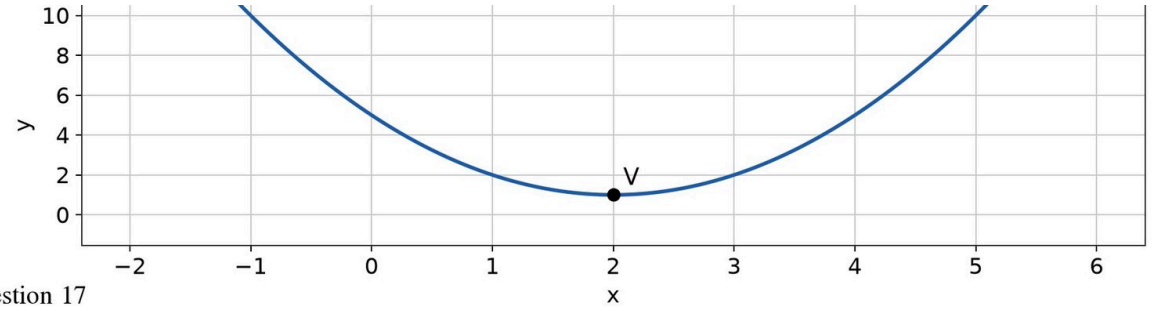
17

The graph shows the parabola y = (x - 2)² + 1. The vertex is



Question 17

The graph shows the parabola $y = (x - 2)^2 + 1$. The vertex is

A) (2, 1)

B) (−2, 1)

C) (2, −1)

D) (1, 2)

A (2, 1)

B (-2, 1)

C (2, -1)

D (1, 2)

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18 If f(3) = 7 and f is one to one, then $f^{-1}(7)$ is ____.

Question 18

If $f(3) = 7$ and f is one to one, then $f^{-1}(7)$ is ____.

ANSWER

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19 If f(x) = 4x - 3, then the value of x for which f(x) = 13 is ____.

Question 19

If $f(x) = 4x - 3$, then the value of x for which $f(x) = 13$ is ____.

ANSWER

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20 For $f(x) = x^2 - 1$ and $g(x) = 2x + 3$, the value of $(f + g)(2)$ is ____.

Question 20

For $f(x) = x^2 - 1$ and $g(x) = 2x + 3$, the value of $(f + g)(2)$ is ____.

ANSWER

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21 The x-intercept of f(x) = 3x - 12 is

Question 21

The x –intercept of $f(x) = 3x - 12$ is

A) –4

B) 12

C) –12

D) 4

A -4

B 12

C -12

D 4

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22 The y-intercept of f(x) = -2x + 9 is

Question 22

The y –intercept of $f(x) = -2x + 9$ is

A) –2

B) 2

C) –9

D) 9

A -2

B 2

C -9

D 9

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23 Which function is increasing on its entire domain?

Question 23

Which function is increasing on its entire domain?

A) $f(x) = -x + 1$

B) $f(x) = x^2$

C) $f(x) = 3x - 2$

D) $f(x) = |x|$

A f(x) = -x + 1

B f(x) = x²

C f(x) = 3x - 2

D f(x) = |x|

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24 A function passes the horizontal line test if it is

Question 24

A function passes the horizontal line test if it is

A) even

B) one to one

C) quadratic

D) periodic

A even

B one to one

C quadratic

D periodic

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25 If f(x) = x + 1/x - 2, then f(5) is

Question 25

If $f(x) = \frac{x+1}{x-2}$, then $f(5)$ is

A) 2

B) $\frac{6}{7}$

C) 6

D) $\frac{4}{3}$

A 2

B 6/7

C 6

D 4/3

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ANSWER KEY

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

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