ONTARIO ADVANCED FUNCTIONS, GRADE 12, UNIVERSITY PREPARATION (MHF4U) · UNIT D · 25 QUESTIONS

Combining Functions and Rates of Change — 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 For f(x) = 3x and g(x) = x + 2 the product (fg)(2) is

- A 26
- B 22
- C 24
- D 27

Understand It with Pulse | Flag a mistake

2 **For f(x) = x + 2 and g(x) = x - 3 the value of (f ° g)(4) is**

- A 4
- B 2
- C 5
- D 3

Understand It with Pulse | Flag a mistake

3 **For f(x) = x + 2 and g(x) = 3x the value of (f + g)(2) is**

- A 11
- B 9
- C 10
- D 13

Understand It with Pulse | Flag a mistake

4 **For f(x) = x² the average rate of change from x equal to 1 to x equal to 2 is**

- A 4
- B 3
- C 2
- D 14

Understand It with Pulse | Flag a mistake

5 **For f(x) = x² the instantaneous rate of change at x equal to 2 is**

- A 4
- B 6
- C 2
- D 15

Understand It with Pulse | Flag a mistake

6 **If $f(x) = 2x + 1$ then $f^{-1}(5)$ equals**

- A 1
- B 3
- C 2
- D 0

Understand It with Pulse | Flag a mistake

7 **The difference quotient for $f(x) = 3x$ with step h is equal to**

- A 3
- B 0
- C 2
- D 4

Understand It with Pulse | Flag a mistake

8 The domain of $f(x) = \sqrt{x - 2}$ is

A $x > 2$

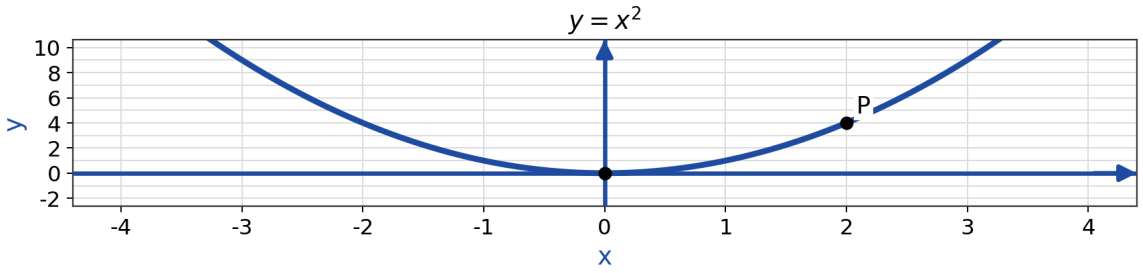
B $x \geq 2$

C $x \leq 2$

D $x \geq -2$

Understand It with Pulse | Flag a mistake

9 The graph shows a function. The value at the marked point is Figure 1



A 4

B 5

C 3

D 8

Understand It with Pulse | Flag a mistake

10 **For f(x) = 4x and g(x) = x + 3 the product (fg)(2) is**

A 42

B 40

C 38

D 44

Understand It with Pulse | Flag a mistake

11 **For f(x) = x + 3 and g(x) = x - 2 the value of (f ° g)(5) is**

A 6

B 7

C 5

D 8

Understand It with Pulse | Flag a mistake

12 For f(x) = x + 3 and g(x) = 4x the value of (f + g)(2) is

- A 13
- B 14
- C 12
- D 17

Understand It with Pulse | Flag a mistake

13 For f(x) = x^2 the average rate of change from x equal to 1 to x equal to 3 is

- A 5
- B 3
- C 4
- D 15

Understand It with Pulse | Flag a mistake

14 For $f(x) = x^2$ the instantaneous rate of change at x equal to 3 is

- A 8
- B 6
- C 4
- D 3

Understand It with Pulse | Flag a mistake

15 If $f(x) = 3x + 1$ then $f^{-1}(7)$ equals

- A 1
- B 2
- C 3
- D 0

Understand It with Pulse | Flag a mistake

16 The difference quotient for f(x) = 4x with step h is equal to

- A 4
- B 0
- C 2
- D 5

Understand It with Pulse | Flag a mistake

17 The domain of $f(x) = \sqrt{x - 3}$ is

- A $x > 3$
- B $x \leq 3$
- C $x \geq 3$
- D $x \geq -3$

Understand It with Pulse | Flag a mistake

18 **For f(x) = 2x and g(x) = x + 5 the product (fg)(2) is**

A 28

B 30

C 26

D 39

Understand It with Pulse | Flag a mistake

19 **For f(x) = x + 4 and g(x) = x - 5 the value of (f ° g)(6) is**

A 6

B 5

C 4

D 7

Understand It with Pulse | Flag a mistake

20 **For f(x) = x + 4 and g(x) = 2x the value of (f + g)(2) is**

A 11

B 9

C 12

D 10

Understand It with Pulse | Flag a mistake

21 **For f(x) = x^2 the average rate of change from x equal to 1 to x equal to 4 is**

A 6

B 4

C 16

D 5

Understand It with Pulse | Flag a mistake

22 For $f(x) = x^2$ the instantaneous rate of change at x equal to 4 is

- A 10
- B 6
- C 8
- D 4

Understand It with Pulse | Flag a mistake

23 If $f(x) = 4x + 1$ then $f^{-1}(9)$ equals

- A 2
- B 1
- C 3
- D 0

Understand It with Pulse | Flag a mistake

24 The difference quotient for f(x) = 5x with step h is equal to

- A 0
- B 2
- C 5
- D 6

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

ANSWER KEY

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

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