MFOM11 · BRITISH COLUMBIA

MFOM11
Practice Test

Unit B: Graphical Analysis of Functions and Systems

25 Questions

Original practice test based on the British Columbia curriculum. Work through each question, then check your answers at the end.

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.

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Question 1

The vertex of the parabola $y = 2(x - 3)^2 - 1$ is

A) $(3, -1)$

B) $(-3, -1)$

C) $(3, 1)$

D) $(-3, 1)$

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Question 2

The y –intercept of the parabola $y = 2x^2 - 3x + 5$ is ____.

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Question 3

The axis of symmetry of the parabola $y = x^2 + 6x + 2$ is

A) $x = 3$

B) $x = -3$

C) $x = 6$

D) $x = -6$

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Question 4

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

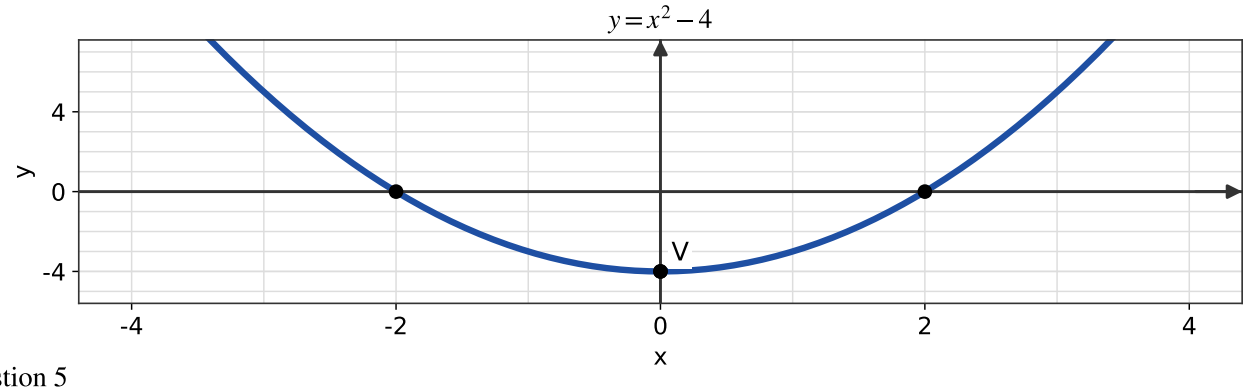
A) $(2, -1)$

B) $(-2, -1)$

C) $(2, 1)$

D) $(-2, 1)$

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Question 5

The graph shows the parabola $y = x^2 - 4$. The value of y when $x = 0$ is

A) 0

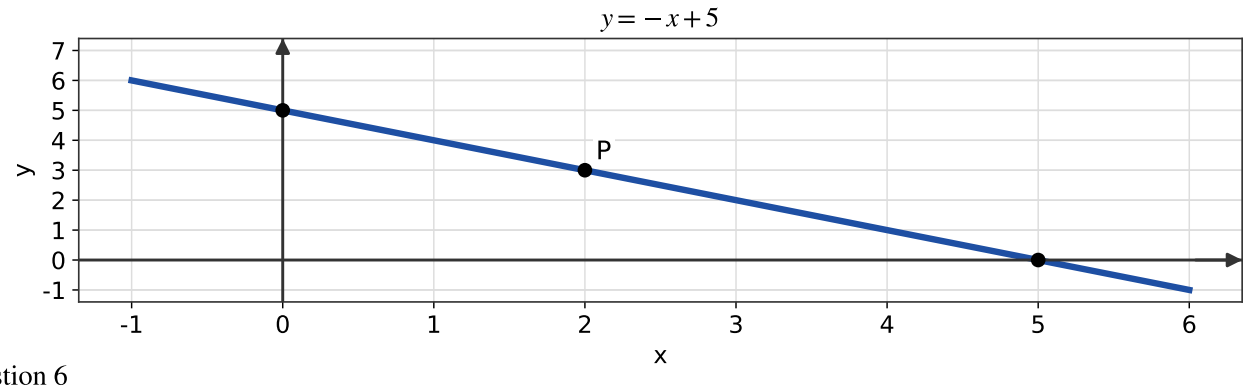
B) 4

C) -2

D) -4

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Question 6

The graph shows the line $y = -x + 5$. The value of y when $x = 2$ is

A) 3

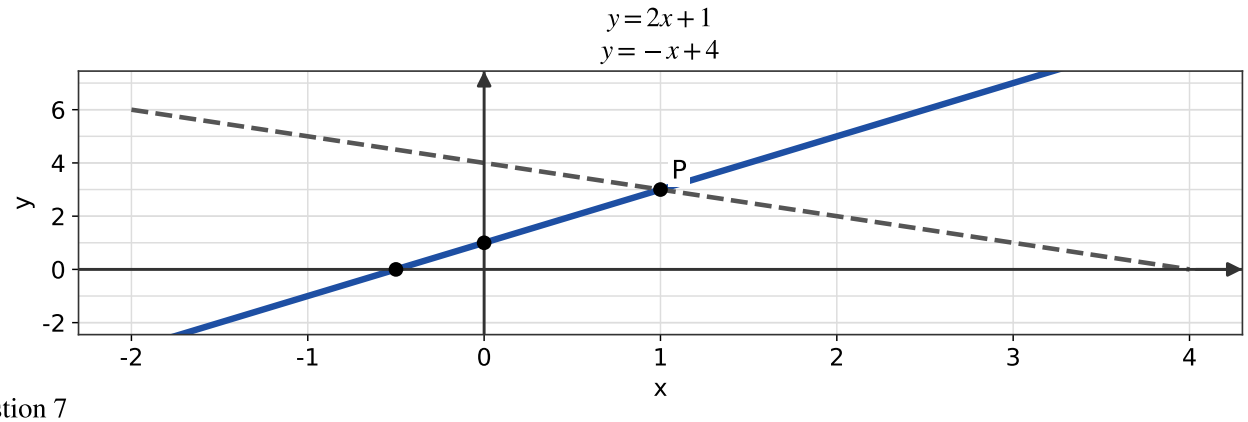
B) 7

C) -3

D) 2

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Question 7

The lines $y = 2x + 1$ and $y = -x + 4$ intersect at

A) $(3, 1)$

B) $(1, 3)$

C) $(2, 5)$

D) $(0, 4)$

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Question 8

The solution of the system $y = x + 2$ and $y = -2x + 5$ is

A) $(0, 2)$

B) $(3, 5)$

C) $(1, 3)$

D) $(2, 4)$

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Question 9

Two lines are parallel and distinct. The number of solutions of their system is

A) 1

B) 2

C) infinitely many

D) 0

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Question 10

Two lines coincide. The number of solutions of their system is

A) infinitely many

B) 0

C) 1

D) 2

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Question 11

The graph of $y = x^2 - 2x - 3$ crosses the x –axis at

A) $x = -1$ only

B) $x = -1$ and $x = 3$

C) $x = 1$ and $x = -3$

D) $x = 3$ only

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Question 12

For the parabola $y = x^2 - 4x + 3$, the values of x for which $y < 0$ are

A) $x > 3$

B) $x < 1$

C) $1 < x < 3$

D) $x < 1$ or $x > 3$

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Question 13

For the line $y = 2x - 4$, the values of x for which $y \geq 0$ are

A) $x \leq 2$

B) $x \geq -2$

C) $x \leq -2$

D) $x \geq 2$

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Question 14

The domain of the function shown by a graph from $x = -2$ to $x = 5$, including both endpoints, is

A) $-2 \leq x \leq 5$

B) $-2 < x < 5$

C) $-5 \leq x \leq 2$

D) $x \geq -2$

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Question 15

The range of the parabola $y = x^2 + 1$ is

A) all real numbers

B) $y \geq 1$

C) $y \leq 1$

D) $y \geq 0$

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Question 16

The range of the parabola $y = -(x - 2)^2 + 4$ is

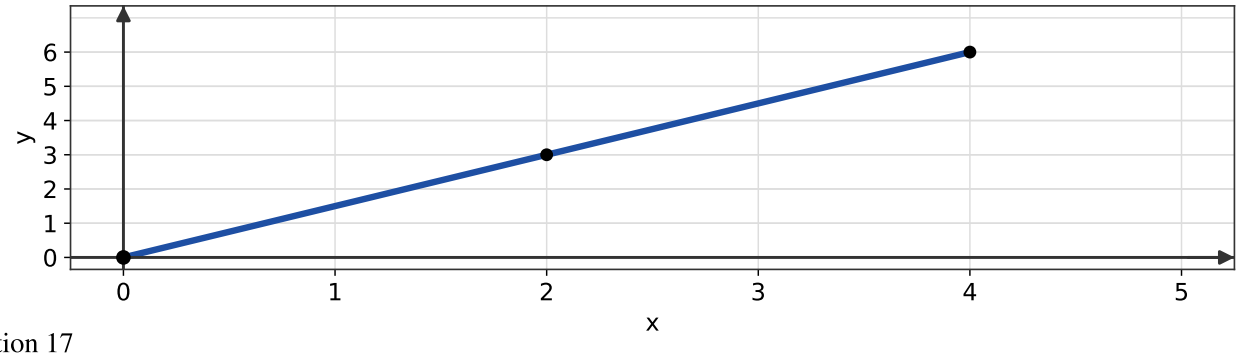
A) $y \leq 2$

B) $y \geq 2$

C) $y \leq 4$

D) $y \geq 4$

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Question 17

The points $(0,\ 0),\ (2,\ 3),$ and $(4,\ 6)$ lie on a line through the origin. The slope of the line is

A) $\frac{2}{3}$

B) 3

C) 2

D) $\frac{3}{2}$

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Question 18

The parabola $y = x^2 - 6x + 8$ has x –intercepts at

A) $x = 2$ and $x = 4$

B) $x = -2$ and $x = -4$

C) $x = 1$ and $x = 8$

D) $x = 2$ only

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Question 19

If $f(x) = x^2 - 5$, then $f(3)$ is ____.

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Question 20

The maximum value of $y = -2x^2 + 8x - 5$ is

A) -5

B) 3

C) 5

D) 8

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Question 21

The minimum value of $y = x^2 - 2x - 8$ is

A) 1

B) 8

C) -9

D) -8

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Question 22

The graph of $y = 3x - 6$ crosses the x-axis at

A) $(0, -6)$

B) $(-2, 0)$

C) $(6, 0)$

D) $(2, 0)$

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Question 23

The solution of the system $y = 3x - 2$ and $y = x + 4$ is

A) $(3, 7)$

B) $(2, 4)$

C) $(1, 1)$

D) $(4, 10)$

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Question 24

For $y = x^2 - 9$, the values of x for which $y \geq 0$ are

A) $x \leq 3$

B) $x \leq -3$ or $x \geq 3$

C) $-3 < x < 3$

D) $x \geq 3$

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Question 25

A function has a local minimum at $x = -1$ and a local maximum at $x = 2$. The function is increasing on

A) $x < -1$

B) all real numbers

C) $-1 < x < 2$

D) $x > 2$

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ANSWER KEY

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

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