NORTHWEST TERRITORIES PRE-CALCULUS 12 (MPREC12) · UNIT B · 25 QUESTIONS

Exponential Functions and Logarithms — 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 **The solution of $\log_2 x = 4$ is**

- **A** $x = 8$
- **B** $x = 16$
- **C** $x = 4$
- **D** $x = 2$

Understand It with Pulse | Flag a mistake

2 **The solution of $2^x = 32$ is**

- **A** x = 6
- **B** x = 5
- **C** x = 4
- **D** x = 16

Understand It with Pulse | Flag a mistake

3 **The domain of y = log(x - 3) is**

- **A** all real x
- **B** all x greater than 0
- **C** all x greater than 3
- **D** all x less than 3

Understand It with Pulse | Flag a mistake

4 The horizontal asymptote of $y = 2^x + 3$ is

- **A** $y = 3$
- **B** $y = 0$
- **C** $y = 2$
- **D** $x = 3$

Understand It with Pulse | Flag a mistake

5 A population of 200 triples every hour. After 2 hours, the population is

ANSWER _____

Understand It with Pulse | Flag a mistake

6 A sample of 100 grams halves every 6 hours. After 12 hours, the mass left is ____ grams.

ANSWER _____

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7 **Bacteria start at 50 and double every 20 minutes. After 60 minutes, the count is**

ANSWER _____

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8 **Doubling a quantity three times multiplies it by**

A 3

B 6

C 8

D 9

Understand It with Pulse | Flag a mistake

9 **If $y = 4^x$, then y at $x = \frac{1}{2}$ is**

A 4

B 2

C 8

D 1

Understand It with Pulse | Flag a mistake

10 **Investing 1000 dollars at 5 percent per year, compounded yearly, gives after 2 years ____ dollars.**

ANSWER _____

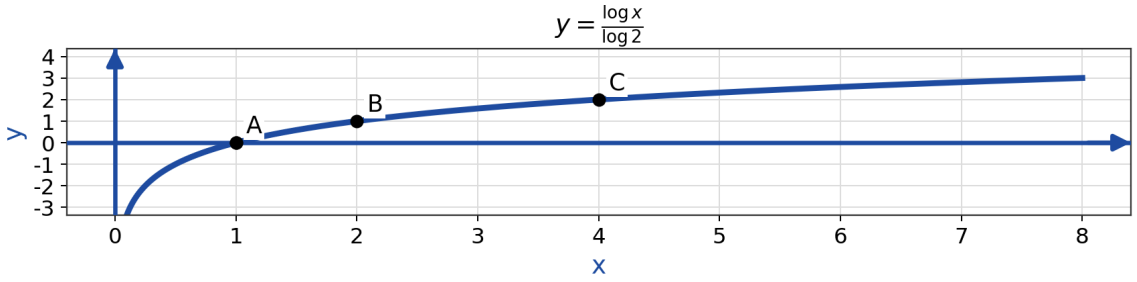
Understand It with Pulse | Flag a mistake

11 **Shifting $y = 2^x$ right 2 and up 1 gives**

- **A** $y = 2^{x+2} + 1$
- **B** $y = 2^{x-2} + 1$
- **C** $y = 2^{x-2} - 1$
- **D** $y = 2^{x+2} - 1$

Understand It with Pulse | Flag a mistake

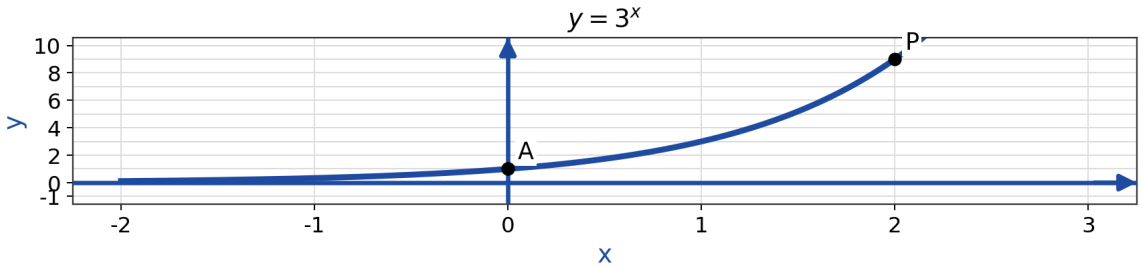
12 **The graph shows $y = \log_2 x$, with points A, B, and C. The x-intercept of this graph is**



- **A** 2
- **B** 0
- **C** 1
- **D** 4

Understand It with Pulse | Flag a mistake

13 **The graph shows $y = 3^x$, with point P at x = 2. The y-value at P is**



A 6

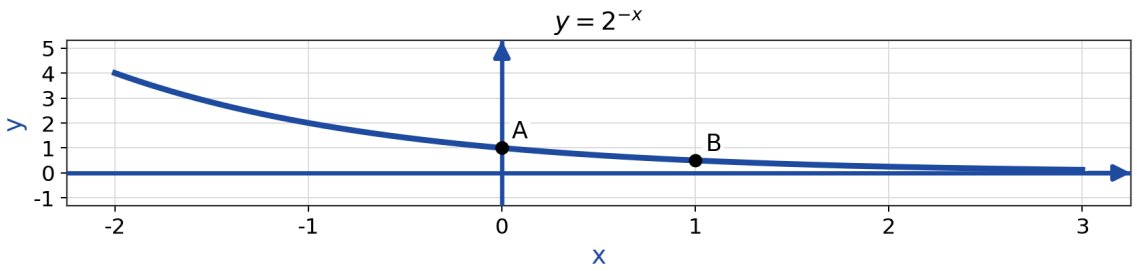
B 9

C 8

D 27

Understand It with Pulse | Flag a mistake

14 **The graph shows $y = 2^{-x}$, with points A and B. The value of this function at x = 1 is**



A 1

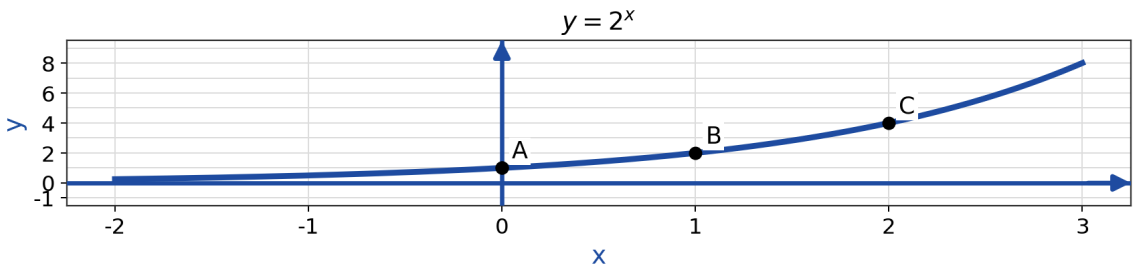
B 2

C 1

D -2

Understand It with Pulse | Flag a mistake

15 **The graph shows $y = 2^x$, with points A, B, and C. The y-intercept of this graph is**



A 0

B 2

C 1

D 4

Understand It with Pulse | Flag a mistake

16 **The range of $y = 3^x$ is**

A all y less than 0

B all real y

C all y greater than 3

D all y greater than 0

Understand It with Pulse | Flag a mistake

17 **The solution of log x = 2 (base 10) is**

A x = 2

B x = 20

C x = 10

D x = 100

Understand It with Pulse | Flag a mistake

18 **The solution of log x + log 10 = 3 (base 10) is**

A x = 100

B x = 1000

C x = 10

D x = 30

Understand It with Pulse | Flag a mistake

19 **The value of 2^3 is**

ANSWER _____

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20 **The solution of $\log_2(x - 1) = 3$ is**

A x = 9

B x = 8

C x = 7

D x = 6

Understand It with Pulse | Flag a mistake

21 **The solution of $3^{2x} = 81$ is**

- **A** x = 2
- **B** x = 4
- **C** x = 3
- **D** x = 8

Understand It with Pulse | Flag a mistake

22 **The domain of $y = \log_2(x + 4)$ is**

- **A** all x less than -4
- **B** all x greater than 4
- **C** all real x
- **D** all x greater than -4

Understand It with Pulse | Flag a mistake

23 The horizontal asymptote of $y = 5^x - 2$ is

- A $y = -2$
- B $y = 0$
- C $y = 5$
- D $x = -2$

Understand It with Pulse | Flag a mistake

24 The solution of $\log_5(2x) = 2$ is

- A $x = 10$
- B $x = 25$
- C $x = 12.5$
- D $x = 5$

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25 **The solution of $4^x = 64$ is**

A x = 4

B x = 3

C x = 2

D x = 16

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. B
2. B
3. C
4. A
5. 1800
6. 25
7. 400
8. C
9. B
10. 1102.5
11. B
12. C
13. B
14. A
15. C
16. D
17. D
18. A
19. 8
20. A
21. A
22. D
23. A
24. C
25. B

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