ALASKA ALGEBRA II · UNIT 3 · 25 QUESTIONS

Exponential, Logarithmic, and Trigonometric Functions — 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 value of 2^5 is**

- A 10
- B 32
- C 25
- D 16

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2 **The value of 3^{-2} is**

- **A** -9
- **B** -6
- **C** 9
- **D** $\frac{1}{9}$

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3 **The value of logbase2of 32 is**

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

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4 **The value of logbase3of 81 is**

- **A** 3
- **B** 27
- **C** 9
- **D** 4

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5 **Which expression is equal to log a + log b?**

- **A** log (a - b)
- **B** log (ab)
- **C** $\log \frac{a}{b}$
- **D** log a · log b

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6 **The solution of $2^x = 64$ is**

A 6

B 8

C 32

D 5

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7 **If log x = 2, then x is**

A 20

B 2

C 100

D 200

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8 **An amount of 200 dollars grows by 5% each year. After 1 year it is**

- A 205 dollars
- B 210 dollars
- C 200 dollars
- D 250 dollars

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9 **A sample of 80 grams has a half-life of 10 years. After 20 years, how many grams remain?**

- A 40
- B 10
- C 60
- D 20

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10 **A bacteria population starts at 50 and doubles every hour. After 4 hours it is**

- **A** 200
- **B** 400
- **C** 800
- **D** 1600

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11 **The value of ln e^3 is**

- **A** e^3
- **B** 3
- **C** 1
- **D** 0

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12 **The solution of logbase2of x + logbase2of (x - 2) = 3 is**

A 4

B -2

C 2

D 8

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13 **The value of logbase4of 64 is**

A 4

B 16

C 8

D 3

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14 The value of sin 30° is

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

B $\frac{1}{2}$

C 1

D $\frac{\sqrt{2}}{2}$

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15 The value of cos 60° is

A $\frac{1}{2}$

B $\frac{\sqrt{3}}{2}$

C 0

D 1

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16 The value of tan 45° is

A 0

B $\frac{1}{2}$

C $\sqrt{3}$

D 1

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17 If $\sin\theta = \frac{3}{5}$ and θ is in Quadrant I, then $\cos\theta$ is

A $\frac{4}{5}$

B $\frac{5}{4}$

C $\frac{3}{4}$

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

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18 The reference angle for 150° is

- A 60°
- B 150°
- C 30°
- D 120°

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19 The value of cos π is

- A 0
- B 1
- C -1
- D $\frac{1}{2}$

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20 **The amplitude of $y = 3 \sin x$ is**

- A 1
- B 3
- C 2π
- D 6

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21 **The period of $y = \cos 2x$ is**

- A 2π
- B π
- C $\frac{\pi}{2}$
- D 4π

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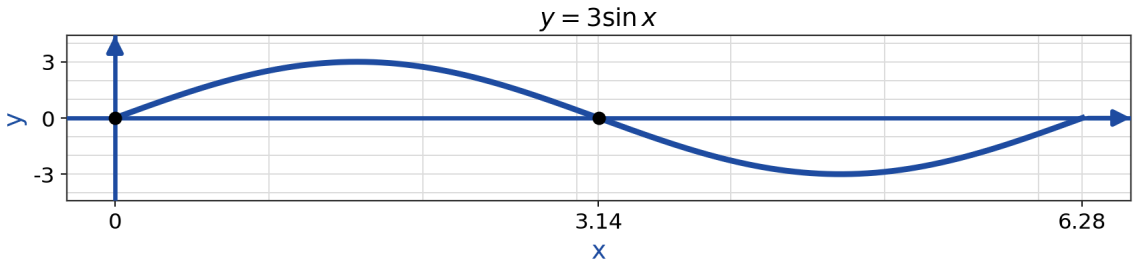
22 **The graph below shows y = 3 sin x for 0 ≤ x ≤ 2π. The amplitude of the graph is**



A 1

B 2

C 3

D 6

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23 The smallest positive solution of $\sin x = \frac{1}{2}$ is

- **A** $\frac{\pi}{3}$
- **B** $\frac{\pi}{6}$
- **C** $\frac{\pi}{4}$
- **D** $\frac{5\pi}{6}$

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24 An amount of 200 grams decays by half three times. How many grams remain?

- **A** 100
- **B** 50
- **C** 25
- **D** 12.5

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25 **The solution of $5^x = 125$ is**

ANSWER

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ANSWER KEY

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

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