ILLINOIS GEOMETRY · UNIT 3 · 25 QUESTIONS

Trigonometry and Measurement — 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 **In a right triangle, the side opposite an acute angle is 5 and the hypotenuse is 13. The sine of the angle is**

- **A** $\frac{5}{13}$
- **B** $\frac{12}{13}$
- **C** $\frac{5}{12}$
- **D** $\frac{13}{5}$

Understand It with Pulse | Flag a mistake

2 In a right triangle, the side adjacent to an acute angle is 12 and the hypotenuse is 13. The cosine of the angle is

- **A** $\frac{5}{13}$
- **B** $\frac{12}{13}$
- **C** $\frac{12}{5}$
- **D** $\frac{13}{12}$

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3 In a right triangle, the side opposite an acute angle is 9 and the adjacent side is 12. The tangent of the angle is

- **A** $\frac{4}{3}$
- **B** $\frac{5}{4}$
- **C** $\frac{3}{4}$
- **D** $\frac{9}{5}$

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4 **In a right triangle, an angle measures 30° and the opposite side is 5. The hypotenuse is**

- A 5
- B 10
- C 8.7
- D 2.5

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5 **In a right triangle, an angle measures 60° and the hypotenuse is 12. The adjacent side is**

- A 10.4
- B 24
- C 6
- D 12

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6 **In a right triangle, an angle measures 45° and the hypotenuse is 10. The opposite side, to one decimal place, is about**

- A 5
- B 10
- C 14.1
- D 7.1

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7 **In a right triangle, the side opposite an acute angle is 3 and the hypotenuse is 6. The angle measures**

- A 45°
- B 30°
- C 90°
- D 60°

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8 In a right triangle, the side opposite an angle is 9 and the adjacent side is 12. The angle, to one decimal place, is about

- A 41.4°
- B 48.6°
- C 36.9°
- D 53.1°

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9 A tree is 20 m from an observer. The angle of elevation to the top is 30°. The height of the tree, to one decimal place, in metres, is about

- A 11.5
- B 34.6
- C 10
- D 20

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10 From a point 50 m from the base of a tower, the angle of elevation to the top is 45°. The height of the tower, in metres, is

- A 25
- B 50
- C 70.7
- D 100

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11 In a triangle, angle A measures 30°, side a = 10, and angle B measures 60°. Side b, to one decimal place, is about

- A 10
- B 20
- C 17.3
- D 8.7

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12 **In a triangle, two sides measure 5 and 7 with included angle 60°. The third side, to one decimal place, is about**

- A 4
- B 8.6
- C 12
- D 6.2

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13 **In a triangle, the sides measure 5, 6, and 7. The angle opposite the side of length 7, to one decimal place, is about**

- A 78.5°
- B 44.4°
- C 90°
- D 60°

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14 **A triangle has two sides of lengths 8 and 10 with included angle 30°. Its area is**

- A 40
- B 20
- C 80
- D 10

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15 **A triangle has base 10 and height 6. Its area is**

- A 60
- B 16
- C 30
- D 15

Understand It with Pulse | Flag a mistake

16 **A rectangular prism measures 3 by 4 by 5. Its surface area is**

A 60

B 47

C 94

D 120

Understand It with Pulse | Flag a mistake

17 **A rectangular prism measures 3 by 4 by 5. Its volume is**

A 47

B 94

C 120

D 60

Understand It with Pulse | Flag a mistake

18 **A cylinder has radius 3 and height 10. Its volume, to one decimal place, is about**

- A 282.7
- B 188.5
- C 94.2
- D 942.5

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19 **A cone has radius 4 and height 9. Its volume, to one decimal place, is about**

- A 452.4
- B 150.8
- C 50.3
- D 301.6

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20 **A sphere has radius 3. Its volume, to one decimal place, is about**

- A 226.2
- B 37.7
- C 113.1
- D 339.3

Understand It with Pulse | Flag a mistake

21 **A cube has side length 5. Its surface area is**

- A 150
- B 25
- C 125
- D 30

Understand It with Pulse | Flag a mistake

22 **A right triangle has hypotenuse 13 and one leg 5. The other leg is _____**

ANSWER

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23 **A ladder 8 m long leans against a wall at 70° to the ground. Its height up the wall, to one decimal place, in metres, is about _____**

ANSWER

Understand It with Pulse | Flag a mistake

24 **A cylinder has radius 2 and height 5. Its volume, to one decimal place, is about _____**

ANSWER

Understand It with Pulse | Flag a mistake

25 **From a point 30 m from the base of a tower, the angle of elevation to the top is 60°. The height of the tower, to one decimal place, in metres, is about _____**

ANSWER

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ANSWER KEY

1. A
2. B
3. C
4. B
5. C
6. D
7. B
8. C
9. A
10. B
11. C
12. D
13. A
14. B
15. C
16. C
17. D
18. A
19. B
20. C
21. A
22. 12
23. 7.5
24. 62.8
25. 52.0

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