GEOMETRY · NORTH DAKOTA

Geometry

Practice Test

Unit 3: Trigonometry and Measurement

25 Questions

Original practice test based on the North Dakota 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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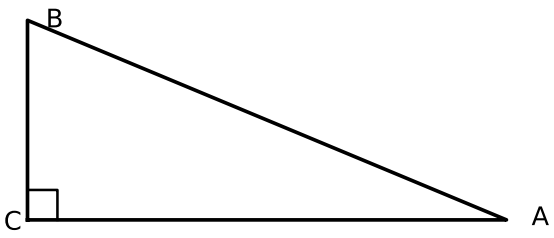

Question 1

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) $\frac{13}{5}$

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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 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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Question 15

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

A) 60

B) 16

C) 30

D) 15

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Question 16

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

A) 60

B) 47

C) 94

D) 120

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Question 17

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

A) 47

B) 94

C) 120

D) 60

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Question 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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Question 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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Question 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

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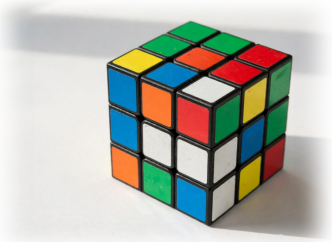

Question 21

A cube has side length 5. Its surface area is

A) 150

B) 25

C) 125

D) 30

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Question 22

A right triangle has hypotenuse 13 and one leg 5. The other leg is ____

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Question 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 ____

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Question 24

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

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Question 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 ____

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ANSWER KEY

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

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