ALBERTA MATH 10C · UNIT 1 · 25 QUESTIONS

Trigonometry — 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 the right triangle ABC shown, the legs have lengths 6 cm and 8 cm and the hypotenuse has length 10 cm. The value of sin A is**

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

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2 **A right triangle has a hypotenuse of 20 m and an acute angle of 30°. The length of the side opposite the 30° angle is**

- **A** 17.3 m
- **B** 10.0 m
- **C** 11.5 m
- **D** 23.1 m

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3 **The right triangle PQR shown has legs of length 7 cm and 24 cm and a hypotenuse of length 25 cm. The value of sin R is**

- **A** $\frac{7}{25}$
- **B** $\frac{25}{24}$
- **C** $\frac{7}{24}$
- **D** $\frac{24}{25}$

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4 **The angle of elevation of an object, as seen from a point, is**

A The angle between the line of sight and the vertical

B The angle measured downward from the horizontal to the line of sight

C The angle measured upward from the horizontal to the line of sight

D The angle between the line of sight and the object

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5 **In a right triangle, an acute angle measures 42° and the side adjacent to it is 15.0 cm. The length of the hypotenuse, to the nearest tenth of a centimetre, is ____ cm**

ANSWER _____

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6 **In a right triangle, the side opposite angle θ is 5 m and the hypotenuse is 13 m. The measure of angle θ, to the nearest tenth of a degree, is**

- A 22.6°
- B 67.4°
- C 20.6°
- D 25.4°

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7 **A tree casts a shadow 18 m long on level ground. The angle of elevation of the sun is 38°. The height of the tree, to the nearest tenth of a metre, is**

- A 11.1 m
- B 14.1 m
- C 23.0 m
- D 29.2 m

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8 **A 6.0 m ladder leans against a vertical wall. The ladder makes an angle of 70° with the ground. The height the ladder reaches up the wall, to the nearest tenth of a metre, is**



A 2.1 m

B 5.5 m

C 5.6 m

D 6.4 m

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9 From the top of a 45 m cliff, the angle of depression of a boat is 28°. The horizontal distance from the base of the cliff to the boat, to the nearest tenth of a metre, is

- **A** 21.1 m
- **B** 39.7 m
- **C** 95.9 m
- **D** 84.6 m

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10 The right triangle ABC shown has legs of length 9 cm and 16 cm. The measure of angle A, to the nearest degree, is ____°

ANSWER _____

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11 **A loading ramp is 8.0 m long. One end rests on the ground and the other end reaches a platform 1.2 m above the ground. The angle the ramp makes with the ground, to the nearest tenth of a degree, is**

- **A** 8.6°
- **B** 9.9°
- **C** 81.4°
- **D** 6.7°

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12 **In a right triangle, the hypotenuse is 17 cm and an acute angle is 53°. The length of the side opposite the 53° angle, to the nearest tenth of a centimetre, is**

- **A** 10.2 cm
- **B** 21.3 cm
- **C** 13.6 cm
- **D** 12.8 cm

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13 **A guy wire is attached to the top of a 12 m pole and anchored in the ground 9 m from the base of the pole. The triangle shown represents the pole, the ground, and the wire. The angle the wire makes with the ground, to the nearest degree, is**

A 37°

B 53°

C 41°

D 49°

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14 **A kite is flying on a string that is 65 m long. The string is taut and makes an angle of 58° with the horizontal, and the string is held at ground level. The height of the kite above the ground, to the nearest tenth of a metre, is ____ m**



ANSWER

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15 In right triangle ABC, the right angle is at C. Angle B is 64° and the side adjacent to angle B is 7.5 cm. The length of the hypotenuse, to the nearest tenth of a centimetre, is

- A 3.3 cm
- B 6.7 cm
- C 15.0 cm
- D 17.1 cm

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16 An observer stands 30 m from the base of a building on level ground. The angle of elevation of the top of the building is 47°. The height of the building, to the nearest tenth of a metre, is

- A 32.2 m
- B 28.0 m
- C 21.9 m
- D 20.5 m

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17 From the top of a lighthouse 60 m above the water, the angle of depression of a ship is 12°. The horizontal distance from the base of the lighthouse to the ship, to the nearest tenth of a metre, is

- **A** 12.5 m
- **B** 58.7 m
- **C** 282.3 m
- **D** 288.6 m

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18 The foot of a 7.2 m ladder is placed 1.8 m from the base of a vertical wall. The angle the ladder makes with the ground, to the nearest tenth of a degree, is ____°

ANSWER _____

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19 **In a right triangle, x is the side opposite angle θ and the hypotenuse is 14. An equation that can be used to find x is**

- **A** $x = 14\sin\theta$
- **B** $x = 14\cos\theta$
- **C** $x = 14\tan\theta$
- **D** $x = \frac{14}{\sin\theta}$

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20 **From a point on level ground, the angle of elevation of the top of a flagpole is 41°. The point is 25 m from the base of the flagpole, and the observer's eyes are 1.7 m above the ground. The height of the flagpole, to the nearest tenth of a metre, is**

- **A** 21.7 m
- **B** 18.9 m
- **C** 25.0 m
- **D** 23.4 m

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21 **In the right triangle ABC shown, angle A measures 27° and the side opposite angle A has length 11.5 cm. The length of the side adjacent to angle A, to the nearest tenth of a centimetre, is ____ cm**

ANSWER _____

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22 **An airplane is at an altitude of 8000 m. The pilot measures an angle of depression of 9° to an airport. The horizontal distance from the airplane to the airport, to the nearest tenth of a kilometre, is**



A 1.3 km

B 50.5 km

C 51.1 km

D 7.9 km

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23 **In a right triangle, the side adjacent to angle θ is 11 cm and the hypotenuse is 19 cm. The measure of angle θ, to the nearest tenth of a degree, is ____°**

ANSWER _____

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24 **In a right triangle, the hypotenuse is 21 cm and an acute angle A measures 48°. The lengths of the side opposite angle A and the side adjacent to angle A, respectively, to the nearest tenth of a centimetre, are**

A Opposite: 14.1 cm Adjacent: 15.6 cm

B Opposite: 15.6 cm Adjacent: 14.1 cm

C Opposite: 15.6 cm Adjacent: 23.3 cm

D Opposite: 12.5 cm Adjacent: 17.0 cm

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25 **A kite is 36 m above the hand of the person flying it, and the point on the ground directly below the kite is 42 m from the person. The length of the taut kite string, to the nearest tenth of a metre, is ____ m**

ANSWER _____

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ANSWER KEY

1. A
2. B
3. D
4. C
5. 20.2
6. A
7. B
8. C
9. D
10. 29
11. A
12. C
13. B
14. 55.1
15. D
16. A
17. C
18. 75.5
19. A
20. D
21. 22.6
22. B
23. 54.6
24. B
25. 55.3

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