

Geometry - Right Triangle Trigonometry - Quiz

Common Core G-SRT.C.6, G-SRT.C.7, G-SRT.C.8 · maths-pdf.fr/en/

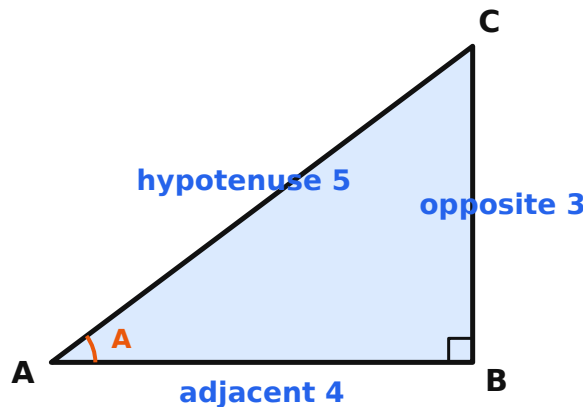
Name: _____ Class: _____ Date: ____/____/____

Test your understanding of trigonometric ratios with this 10-question multiple-choice quiz. Each question has one correct answer, and the explanation after it names the typical mistake behind the wrong choices. Take it after the lesson or before the test.

Geometry · Common Core State Standards: **G-SRT.C.6, G-SRT.C.7, G-SRT.C.8**

Questions

Question 1



Sides are named relative to angle A.

In the triangle, what is $\sin A$?

- A. $3/5$
- B. $4/5$
- C. $3/4$
- D. $5/3$

Question 2

Which ratio is adjacent over hypotenuse?

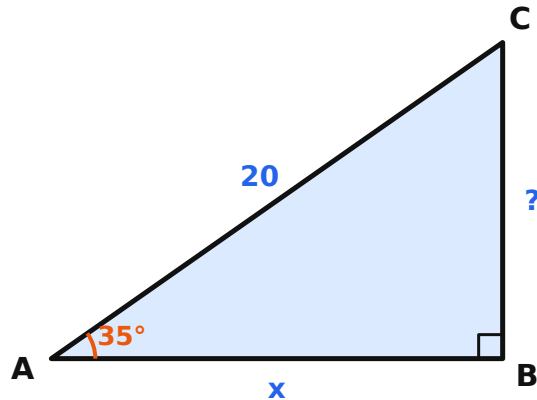
- A. sine
- B. tangent
- C. cosine
- D. secant only

Question 3

$\sin 20$ degrees equals the cosine of which angle?

- A. 20 degrees
- B. 160 degrees
- C. 70 degrees
- D. 340 degrees

Question 4



Use a ratio that connects the known side and the unknown side.

The hypotenuse is 20 and angle A is 35 degrees. Which expression gives the side opposite A?

- A. $20 \cos 35$
- B. $20 \sin 35$
- C. $20 \tan 35$
- D. $20 / \sin 35$

Question 5

A right triangle has legs 6 and 8. What is the tangent of the angle opposite the leg 6?

- A. $3/5$
- B. $3/4$
- C. $4/3$
- D. $4/5$

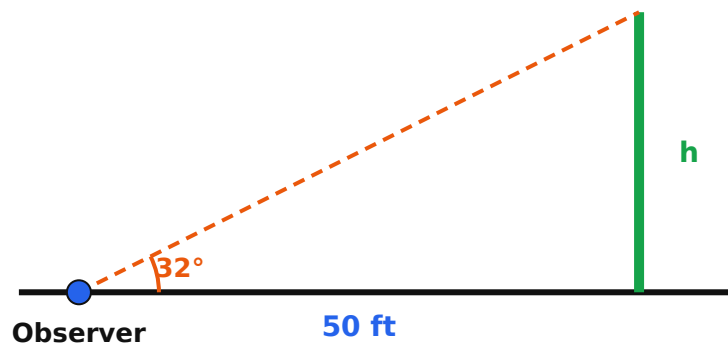
Question 6

To find an acute angle when you know the opposite side and the hypotenuse you use

- A. inverse sine
- B. inverse cosine
- C. inverse tangent

D. the Pythagorean theorem only

Question 7



Angle of elevation: looking up from the horizontal.

From 50 feet away, the angle of elevation to the top of a tree is 32 degrees. About how tall is the tree?

- A. 31.2 feet
- B. 80 feet
- C. 26.5 feet
- D. 42.4 feet

Question 8

In a 30-60-90 triangle the hypotenuse is 10. What is the shorter leg?

- A. 10 times the square root of 3
- B. 5 times the square root of 3
- C. 20
- D. 5

Question 9

A ladder 10 feet long makes a 60 degree angle with the ground. How far is its base from the wall?

- A. 8.7 feet
- B. 10 feet
- C. 17.3 feet
- D. 5 feet

Question 10

The angle of depression from a tower to a car is 20 degrees. The angle of elevation from the

car to the tower is

- A. 70 degrees
- B. 20 degrees
- C. 160 degrees
- D. 90 degrees

Answers

1. **A** – Sine is opposite over hypotenuse: $3/5$. The ratio $4/5$ is cosine and $3/4$ is tangent.
2. **C** – Cosine = adjacent/hypotenuse (CAH).
3. **C** – Sine of an angle equals the cosine of its complement: $90 - 20 = 70$.
4. **B** – Opposite over hypotenuse is sine, so the opposite side is $20 \sin 35$ (about 11.5).
5. **B** – Tangent is opposite over adjacent: $6/8 = 3/4$.
6. **A** – Opposite and hypotenuse give sine, so use the inverse sine.
7. **A** – $\tan 32 = h/50$, so $h = 50 \times 0.6249 = 31.2$. Using sine or cosine would be wrong because the known side is adjacent.
8. **D** – The side opposite 30 degrees is half the hypotenuse, 5.
9. **D** – The base is the adjacent side: $10 \cos 60 = 5$. The 8.7 is the height $10 \sin 60$.
10. **B** – The two angles are alternate interior angles formed by parallel horizontal lines, so they are congruent.

Remember

- $\sin A = \text{opposite/hypotenuse}$, $\cos A = \text{adjacent/hypotenuse}$, $\tan A = \text{opposite/adjacent}$.
- $\sin A = \cos (90 \text{ degrees minus } A)$ for the acute angles of a right triangle.
- Use an inverse function ($\sin^{-1}$, $\cos^{-1}$, $\tan^{-1}$) to find an angle.
- Solving a right triangle means finding all sides and acute angles.
- Angles of elevation and depression are measured from the horizontal.