

Geometry · Right Triangle Trigonometry · Test

Common Core G-SRT.C.6, G-SRT.C.7, G-SRT.C.8 · mathovore.fr

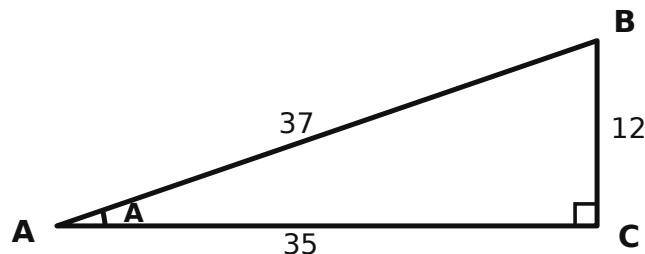
Name: _____ Date: ____/____/____ Score: _____

This test checks trigonometric ratios, similar triangles, complementary angles, special right triangles and solving right triangles under Common Core standards G-SRT.C.6, G-SRT.C.7 and G-SRT.C.8. It has 9 questions worth 20 points and should take about 45 minutes with a scientific calculator in degree mode.

Test information

- **Grade:** Geometry
- **Chapter:** Right Triangle Trigonometry
- **Common Core:** G-SRT.C.6, G-SRT.C.7, G-SRT.C.8
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 2 pts; Question 5: 2 pts; Question 6: 2 pts; Question 7: 3 pts; Question 8: 3 pts; Question 9: 2 pts)

Question 1: Ratios in a right triangle (2 points)



Right triangle with legs 35 and 12 and hypotenuse 37.

- Write $\sin A$, $\cos A$ and $\tan A$ as fractions. (1 point)
- Write $\sin B$ and $\cos B$. (1 point)

Question 2: Similar triangles and sine (2 points)

Right triangles ABC and DEF are similar with $\angle C = \angle F = 90^\circ$ and $\angle A \cong \angle D$. In triangle ABC, $BC = 10$ and $AB = 26$. In triangle DEF, $DE = 39$.

- a. Find EF . (1 point)
b. Explain why $\sin A = \sin D$. (1 point)

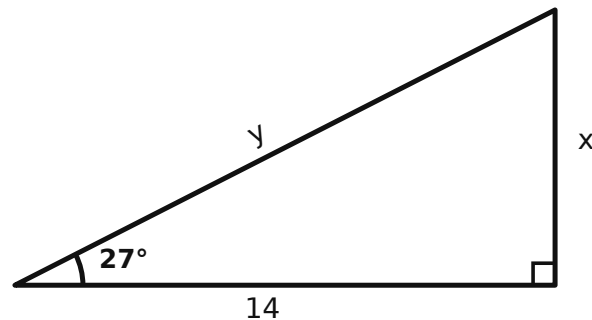
Question 3: Complementary angles (2 points)

- a. Complete: $\sin 17^\circ = \cos \quad^\circ$. (1 point)
b. Find x if $\cos(4x-6)^\circ = \sin(x+11)^\circ$. (1 point)

Question 4: Special right triangles (2 points)

- a. A 45-45-90 triangle has hypotenuse $10\sqrt{2}$ in. Find the length of each leg. (1 point)
b. A 30-60-90 triangle has a shorter leg of 8 cm. Find the hypotenuse and the longer leg. (1 point)

Question 5: Finding sides (2 points)



Right triangle with a 27 degree angle and adjacent side 14.

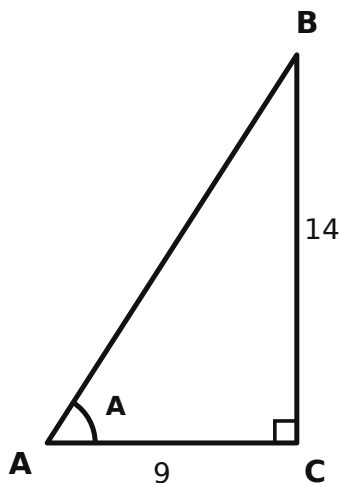
Find x and y to the nearest tenth. (1 point each)

Question 6: Finding angles (2 points)

- a. Find $m\angle P$ if the side opposite P is 9 and the hypotenuse is 13. (1 point)
b. Find $m\angle Q$ if the side opposite Q is 15 and the side adjacent to Q is 6. (1 point)

Round each angle to the nearest tenth of a degree.

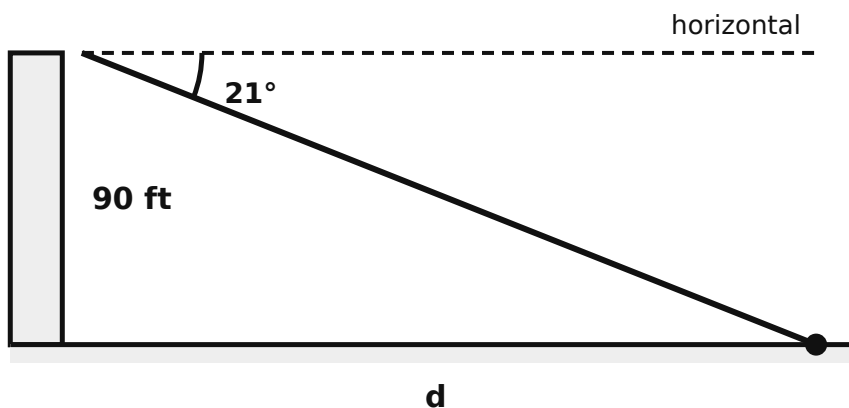
Question 7: Solve a right triangle (3 points)



Right triangle with legs 14 and 9.

Solve the triangle: find AB , $m\angle A$ and $m\angle B$. Round to the nearest tenth. (1 point each)

Question 8: Angle of depression (3 points)



From the top of a 90 ft cliff the angle of depression to a sailboat is 21 degrees.

How far is the sailboat from the base of the cliff? Round to the nearest tenth of a foot. (3 points)

Question 9: Zip line (2 points)

A zip line cable runs from a platform 32 ft above level ground to the ground, and the cable makes a 25° angle with the ground. Find the length of the cable and the horizontal distance it covers. Round to the nearest tenth of a foot. (1 point each)