

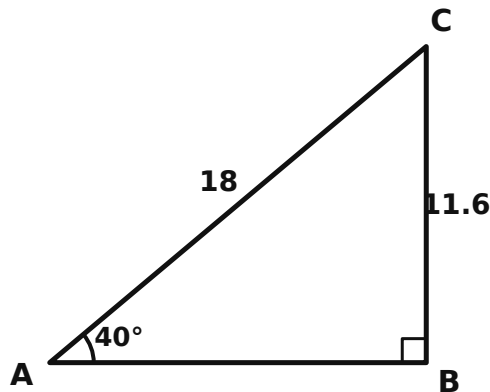
Geometry - Right Triangle Trigonometry - Test Answer Key

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

Use this answer key and scoring guide for the right triangle trigonometry test. Each solution shows the full work, and the scoring note tells how the points are split between method and final answer. Partial credit is listed so that grading stays consistent from one paper to the next.

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

Question 1 - Find a side [2 pts]



x is about 11.6.

$$\sin 40^\circ = \frac{x}{18}$$

$$x = 18 \cdot 0.6428 = 11.6$$

$$x = 11.6$$

Scoring: 1 point for the ratio, 1 point for x .

Question 2 - Find an angle [2 pts]

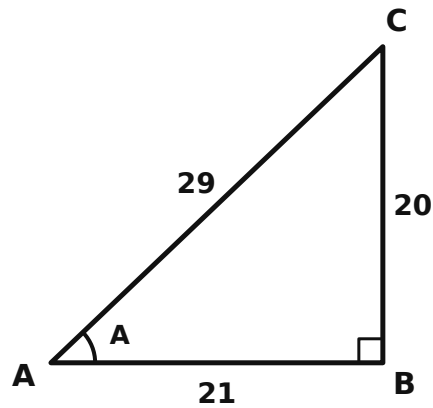
$$\tan A = \frac{9}{14}$$

$$A = \tan^{-1}\left(\frac{9}{14}\right) = 32.7^\circ$$

$$32.7^\circ$$

Scoring: 1 point for the ratio, 1 point for the angle.

Question 3 - Three ratios [3 pts]



Legs 20 and 21, hypotenuse 29.

(a) $\sqrt{20^2 + 21^2} = \sqrt{841} = 29$.

(b) $\sin A = \frac{20}{29}$, $\cos A = \frac{21}{29}$, $\tan A = \frac{20}{21}$.

Scoring: 1 point for the hypotenuse, 2 points for the three ratios (deduct 1 for each error).

Question 4 - Complementary [2 pts]

$$\cos(90^\circ - A) = \sin A = \frac{8}{17}.$$

The adjacent side is $\sqrt{17^2 - 8^2} = 15$, so $\cos A = \frac{15}{17}$.

Scoring: 1 point each.

Question 5 - Cliff height [2 pts]

$$\tan 35^\circ = \frac{h}{120}$$

$$h = 120 \cdot 0.7002 = 84$$

About 84 feet

Scoring: 1 point for the ratio, 1 point for the height.

Question 6 - Solve a right triangle [3 pts]

Other angle: $90^\circ - 65^\circ = 25^\circ$.

Opposite the 65° angle: $30 \cdot \sin 65^\circ = 27.2$.

Adjacent: $30 \cdot \cos 65^\circ = 12.7$.

25° ; legs 27.2 and 12.7

Scoring: 1 point for the angle, 1 point for each leg.

Question 7 - Special triangle [2 pts]

$\text{leg} \cdot \sqrt{2} = 16$, so $\text{leg} = \frac{16}{\sqrt{2}} = 8\sqrt{2}$.

$8\sqrt{2}$

Scoring: 1 point for the setup, 1 point for the radical.

Question 8 - Depression [2 pts]

$\tan 8^\circ = \frac{60}{d}$, so $d = \frac{60}{0.1405} = 427$.

About 427 feet

Scoring: 1 point for the setup, 1 point for the distance.

Question 9 - Ramp [2 pts]

$\sin A = \frac{4}{15}$, so $A = \sin^{-1}\left(\frac{4}{15}\right) = 15.5^\circ$.

15.5°

Scoring: 1 point for the ratio, 1 point for the angle.

Total**20 points**