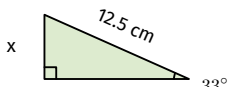
Build Tasks — Answers

Use SOH CAH TOA to find the missing side, labelled x. Give each answer to 2 decimal places.

1.



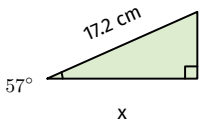
Solution

SOH

$x = 12.5 \sin 33°$

$x \approx 6.81$ cm

2.



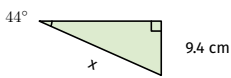
Solution

CAH

$x = 17.2 \cos 57°$

$x \approx 9.37$ cm

3.



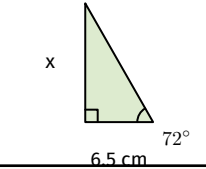
Solution

SOH

$x = 9.4 \div \sin 44°$

$x \approx 13.53$ cm

4.



Solution

TOA

$x = 6.5 \tan 72°$

$x \approx 20.00$ cm

Build Tasks — Answers

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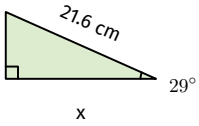
5.



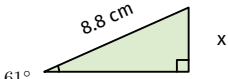
Solution

CAH

$x = 21.6 \cos 29°$

$x \approx 18.89$ cm

6.



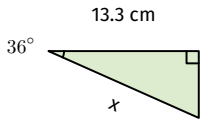
Solution

SOH

$x = 8.8 \sin 61°$

$x \approx 7.70$ cm

7.



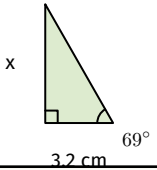
Solution

CAH

$x = 13.3 \div \cos 36°$

$x \approx 16.44$ cm

8.



Solution

TOA

$x = 3.2 \tan 69°$

$x \approx 8.34$ cm

Build Tasks — Answers

Use SOH CAH TOA to answer each question. Give each answer to 2 decimal places.

9. A wheelchair ramp rises at an angle of $6°$ to reach a doorway 0.9 m above the ground. Find the length of the ramp.

Solution

SOH: ramp $= 0.9 \div \sin 6° \approx 8.61$ m

10. A guy-wire is attached to the top of a 25 m mast and meets the ground at an angle of $63°$ to the horizontal. Find the length of the guy-wire.

Solution

SOH: wire $= 25 \div \sin 63° \approx 28.06$ m

11. A surveyor measures the angle to the top of a cliff as $34°$ from a point 120 m from its base. Find the height of the cliff.

Solution

TOA: height $= 120 \tan 34° \approx 80.94$ m

12. A skateboarder rides up a ramp inclined at $19°$, covering a slope length of 8.4 m. Find the horizontal distance covered.

Solution

CAH: distance $= 8.4 \cos 19° \approx 7.94$ m

Build Tasks — Answers

Use SOH CAH TOA to answer each question. Give each answer to 2 decimal places.

13. A bird flies from its nest, climbing at a constant angle of $22°$ above the horizontal ground. If the horizontal distance covered is 60 m, find how far the bird has flown.

Solution

CAH: flight $= 60 \div \cos 22° \approx 64.71$ m

14. A zip-line cable is fixed between two platforms. The lower platform is 18 m, measured horizontally, from the base of the upper platform, and the cable makes an angle of $31°$ with the horizontal. Find the length of the cable.

Solution

CAH: cable $= 18 \div \cos 31° \approx 21.00$ m

15. From the top of a 42 m lighthouse, the angle of elevation from a boat to the top of the lighthouse is $12°$. Find how far the boat is from the base of the lighthouse.

Solution

TOA: distance $= 42 \div \tan 12° \approx 197.59$ m

16. A drone climbs at an angle of $25°$ from its launch point, directly above a bench 45 m, measured horizontally, from the launch point. Find the height of the drone above the ground.

Solution

TOA: height $= 45 \tan 25° \approx 20.98$ m