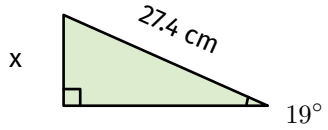
Push Tasks

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

1.



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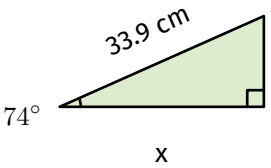
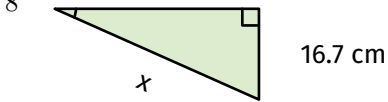
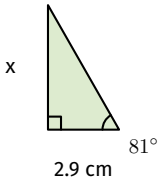


3.



4.



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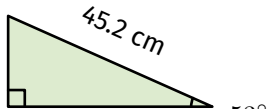
5.



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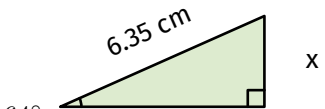
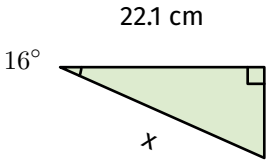
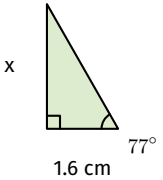


7.



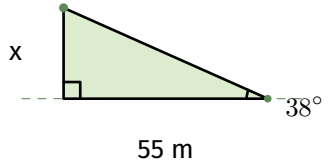
8.



Push Tasks

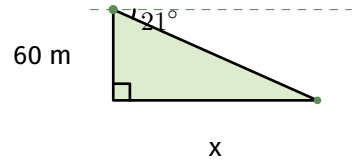
These are angle-of-elevation and angle-of-depression scenes. Give each answer to 2 decimal places.

9.



A drone hovers above a landmark

10.



Find the horizontal distance from

11. A ladder leans against a wall at $70°$ to the ground, reaching a height of 5.8 m. Find (a) the length of the ladder and (b) the horizontal distance from the foot of the ladder to the wall.

12. A hiking trail rises at a constant angle of $11°$ and has a horizontal map distance of 850 m. Find (a) the length of the trail itself and (b) the total height gained.

Push Tasks

Give each answer to 2 decimal places unless told otherwise.

13. From a point 30 m from the base of a tree, the angle of elevation to its top is $27°$. From a point 18 m from the same base, the angle of elevation to a bird on a branch is $38°$. Find (a) the height of the tree.

14. Explain why, for a fixed hypotenuse length, the side opposite the marked angle gets longer as the angle increases from $0°$ towards $90°$.

15. A roof strut makes an angle of $24°$ with the horizontal ceiling joist and must reach a vertical height of 1.35 m. Find (a) the length of the strut and (b) the horizontal distance it spans.

16. A cable car travels in a straight line from a base station to a mountain station 1250 m higher, along a route inclined at $31°$ to the horizontal. Find, to the nearest metre, (a) the length of the route and (b) the horizontal ground distance it covers.