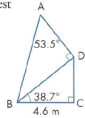
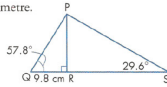


Examples – RTT – L2/L3

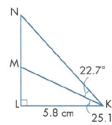
- 5. Find AB, to the nearest tenth of a metre.



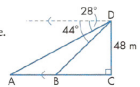
- 6. Find RS, to the nearest tenth of a centimetre.



- 9. Find MN, to the nearest tenth of a centimetre.



- 10. Find AB, to the nearest metre.



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Examples – RTT – L2

- To determine the width of a river, a surveyor marks a point on the bank of the river, A. Her partner is standing directly across the river from her at point C. The surveyor then walks 100 m downstream to point B, where she now has a line of sight to her partner at an angle of 58° relative to the river bank. Determine the width of the river.

- (L2 because YOU need to put together the diagram)

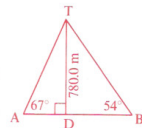
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Examples – RTT – L2/L3

- 4. The angles of elevation from a point A and a point B to the top of a mountain 780.0 m high are 67° and 54° as shown. Based on the information in the diagram, how long would a tunnel be from A to B?



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Examples – RTT – L2/L3

- A forest ranger in a tower 128.0 m high sights two fires in the same line of sight with angles of depression 42° and 61° . How far apart are the fires?
- From a window 26.0 m above the ground, the angle of elevation of the top of a building is 39° , while the angle of depression to the bottom of the building is 29° . How high is the building?
- A helicopter, directly above a building, sights a position, A, on the ground at an angle of depression of 38° . The helicopter then rises vertically above the building, a distance of d , in metres, and sights position A, now at an angle of depression of 52° . If point A is 352.0 m from the building, how far has the helicopter risen?

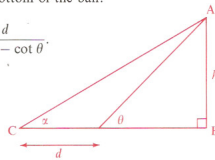
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Examples – RTT – L2/L3

- The angle of elevation of the top of a building from a point, A, 56.0 m from the building is 58° . A flagpole is on top of the building. The angle of elevation from point A to the top of the flagpole is 62° . What is the length of the flagpole?
- Two spotlights are placed 10.0 m apart on the same line of sight. The blue spotlight makes an angle of elevation of 45° and hits the bottom of a mirrored ball. The white spotlight makes an angle of elevation of 70° and hits the same area. What is the height of the bottom of the ball?
- For the diagram, prove that $h = \frac{d}{\cot \alpha - \cot \theta}$.



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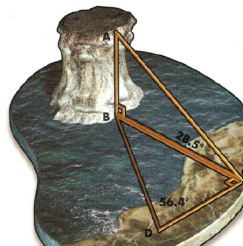
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Examples – RTT – L2/L3

EXAMPLE 5 Rock Pillars

Rock pillars are interesting geological features found in several national parks in Ontario. Rock pillars, found in rivers and lakes, have been sculpted by wind and water. A geologist wanted to determine the height of a rock pillar in a river. The geologist set up a theodolite at C and measured $\angle ACB$ to be 28.5° . A baseline CD was marked off, perpendicular to BC. The length of CD is 10 m, and $\angle CDB = 56.4^\circ$. If the height of the theodolite is 1.6 m, what is the height of the rock pillar, to the nearest tenth of a metre?



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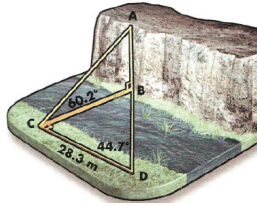
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Examples – RTT – L2/L3

B

13. **Surveying** A surveyor measured the height of a vertical rock face by determining the measurements shown. If the surveyor's theodolite had a height of 1.7 m, find the height of the rock face, AB, to the nearest tenth of a metre.



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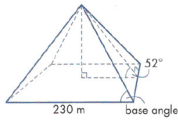
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Examples – RTT – L2/L3

C

19. **Great Pyramid** The Great Pyramid of Khufu has a square base with a side length of about 230 m. The four triangular faces of the pyramid are congruent and isosceles. The altitude of each triangular face makes an angle of 52° with the base. Find the measure of each base angle of the triangular faces, to the nearest degree.



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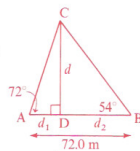
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Examples – RTT – L3

3 An engineer wishes to find the distance across a canyon. She takes a sighting from A and then a sighting from B to a point C on the opposite side of the canyon. The measurements are given on the diagram.

Find distance d across the canyon.



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