

868



TUTORS

Preparation for

High School Mathematics Trigonometry

(Combined)

Math



Instructions and Tips:

- ✓ **You have 75 minutes to complete this worksheet**
- ✓ **This worksheet consists of 3 questions**
- ✓ **Write answers in the spaces provided**
- ✓ **All working must be clearly shown**



Student Name: _____

Student ID: _____

Date: __ / __ / ____

Total Score:

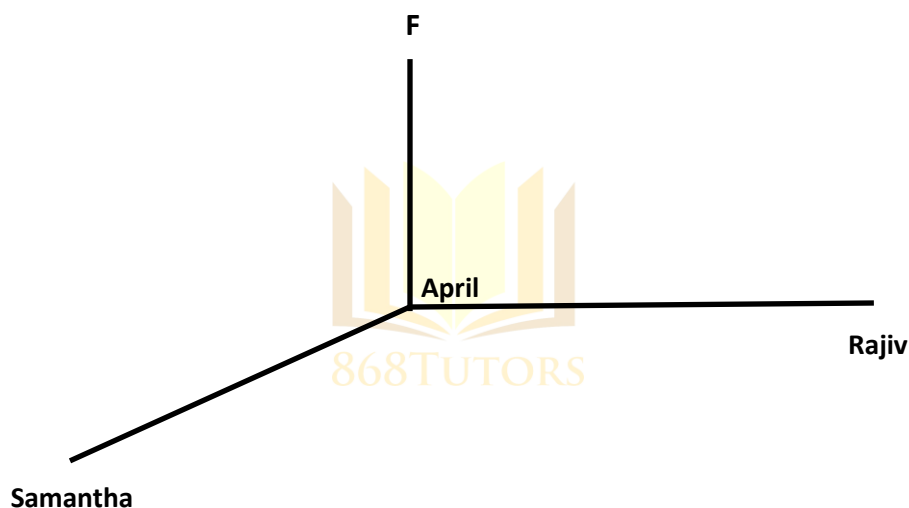
Highest Score:

Tutor's Comments:

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Question 1

The illustration below (not drawn to scale) shows the position of three Form 5 Mathematics students and a flagpole, F. The students and flagpole are on a horizontal surface. April, A is standing at the base of a vertical flagpole. Samantha, S is located due south of April. Rajiv, R is located east of April. The flagpole has a height of 30 m. The angle of elevation of the top of the flagpole from Rajiv's location is 30° . The distance between Samantha and April is 42 m.



- (a) Sketch separate diagrams of the triangles *RAF*, *FAS* and *SAR*. Clearly indicate on each diagram, the lengths of the given sides and angles.

(3 marks)

(b) Calculate the straight line distance between Rajiv and April (RA) to 2 decimal places.



(2 marks)

(c) Calculate the straight line distance between Samantha and Rajiv (SR) to 2 decimal places.

(1 mark)

(d) Calculate the angle of elevation from Samantha's position (from ground) to the top of the flagpole to 2 decimal places. (neglect Samantha's height)

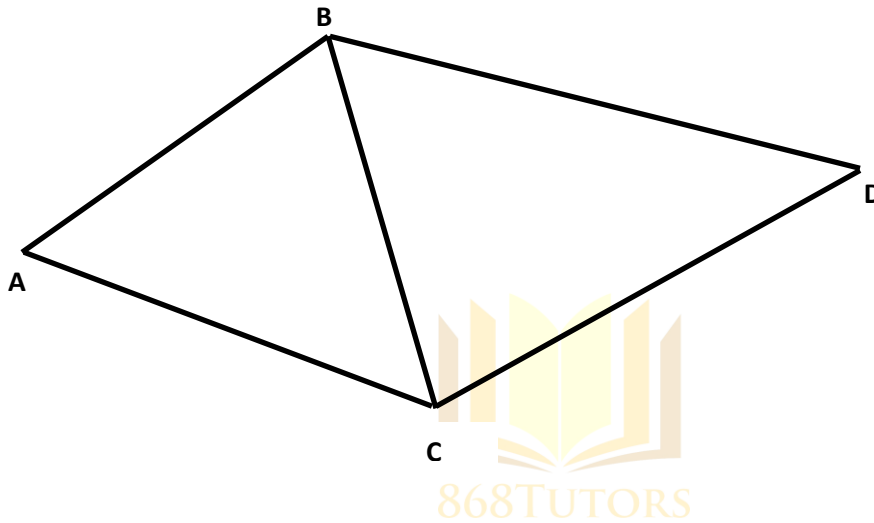


(2 marks)

Question 2

In the illustration below, not drawn to scale, $AB = 9.2$ m, $AC = 12.1$ m, $CD = 13.4$ m, $\angle BAC = 60^\circ$ and $\angle CBD = 40^\circ$

(a) Label the given sides and angles



(2 marks)

Determine the following:

(b) the length of BC to 2 decimal places

(2 marks)

(c) the size of $\angle BDC$ to 2 decimal places

(2 marks)

(d) the area of triangle ABC to 2 decimal places



(2 marks)

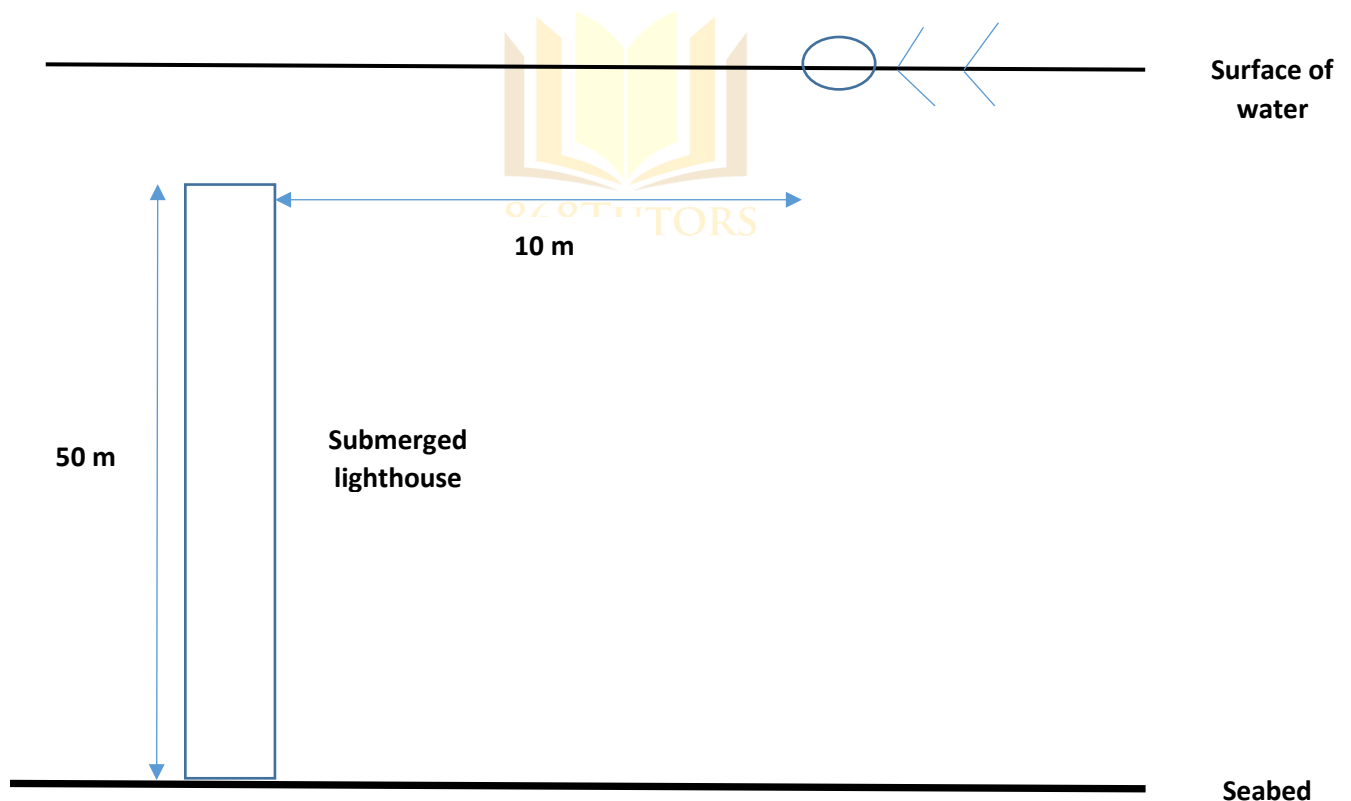
(e) the perpendicular distance from B to AC to 2 decimal places

(1 mark)

Question 3

Off the coast of Icacos Village, Cedros in Trinidad lies a submerged lighthouse. A man swims with snorkeling equipment. He is located 10 meters away in a horizontal distance from the light house. The angle of depression from the swimmer to the top of the light house is 30° . The illustration below represents the situation. We are assuming that the seabed is a horizontal surface and that the water is level.

In the illustration below, draw a line and label the angle of depression.



(1 mark)

The height of the lighthouse is 50 m. Calculate the depth of the water in which the man swims.



(4 marks)



END OF WORKSHEET

