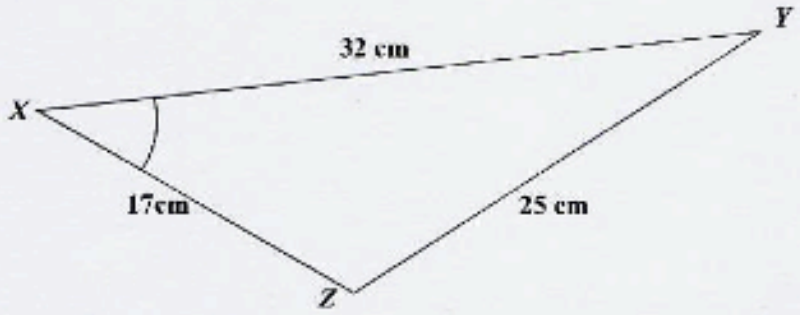
Past Papers Questions - Cosine and Sine

24.

Diagram is NOT accurately drawn.



***XYZ* is a triangle.**

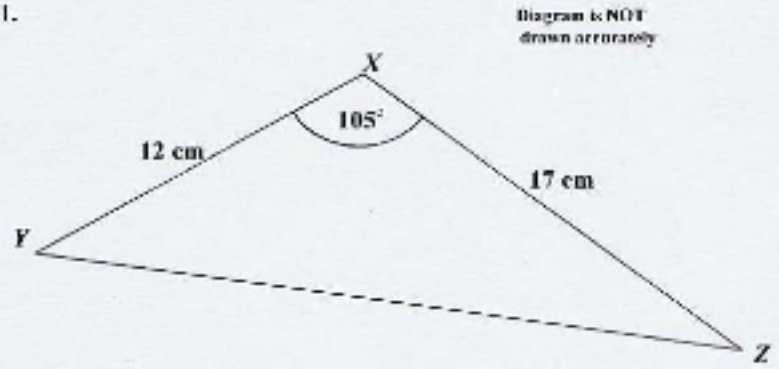
***XY* = 32 cm**
***XZ* = 17 cm**
***YZ* = 25 cm**

Calculate the size of the angle *YXZ*.
Give your answer correct to 3 significant figures.

.....°

(3 marks)

21.



XYZ is a triangle.

XY = 12 cm.
XZ = 17 cm.
Angle *YXZ* = 105°

Calculate the length of the side *YZ*.
Write your answer correct to 3 significant figures.

.....cm
(3 marks)

19. The diagram below shows a hexagonal based pyramid.

The apex of the pyramid is A.
The length of each sloping edge is 8 cm.

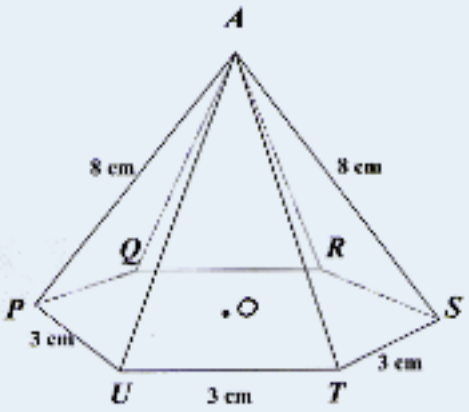


Diagram is **NOT** drawn accurately.

The pyramid's base is a regular hexagon with sides of length 3 cm.
The centre of the hexagon is at O.

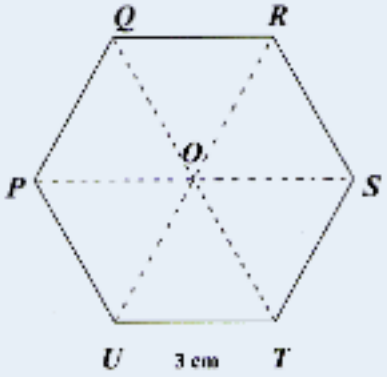


Diagram is **NOT** drawn accurately.

(a) Calculate the height of the apex A above the base of the pyramid.
Give your answer correct to 3 significant figures.

.....cm
(2 marks)

(b) Calculate the size of the angle PAS.
Give your answer correct to 3 significant figures.

.....°
(3 marks)

(c) Calculate the size of the angle PAT.
Give your answer correct to 3 significant figures.

.....°
(3 marks)

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16.

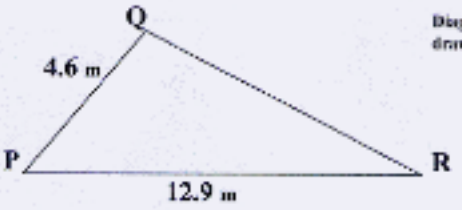


Diagram NOT drawn accurately.

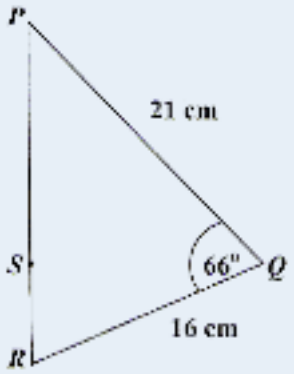
PQ = 4.6 m
PR = 12.9 m

The area of the triangle is 17 m^2.

Calculate the perimeter of the triangle PQR.
Give your answer correct to two significant figures.

.....m
(6 marks)

14.



In the triangle PQR
PQ is 21 cm,
QR is 16 cm and
angle PQR is 66°.

(a) Calculate the area of the triangle PQR.
Give your answer correct to 2 significant figures.

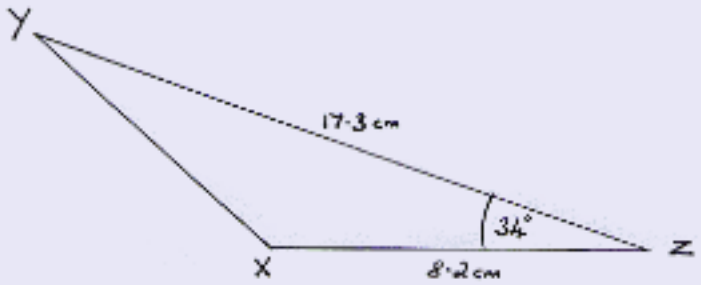
.....cm^2

S is a point on PR such that the angle QSP is 90°.

(b) Calculate the length QS.
Give your answer correct to 2 significant figures.

.....cm
(4 marks)

18. The diagram below shows a triangle XYZ.



XZ is 8.2 cm.
YZ is 17.3 cm.
Angle XZY is 34°

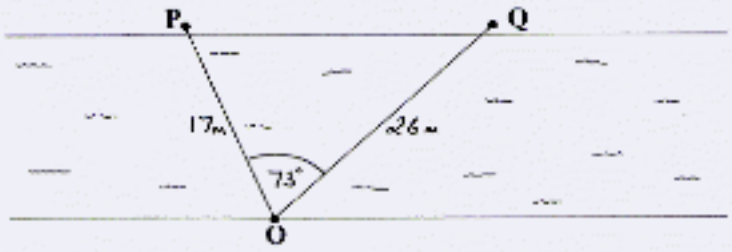
(i) Calculate the length of the side XY. Give your answer correct to 2 significant figures.

.....
(3 marks)

(ii) Find the *area* of the triangle XYZ. Give your answer in the correct units and to 2 significant figures.

.....
(3 marks)

14. The diagram below shows an observer at O on one side of a straight river.
P and Q are two posts on the other side of the river.



(i) Find the distance from P to Q.
Give your answer, in meters, correct to 2 significant figures.

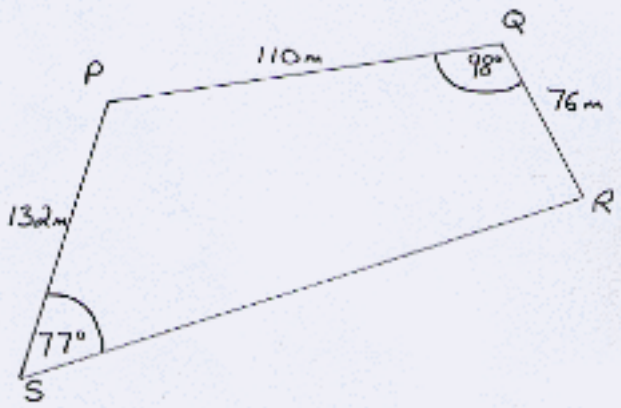
PQ = ...m
(3 marks)

(ii) Find the size of the angle PQO.
Give your answer correct to 2 significant figures.

PQO = ...
(3 marks)

16. The diagram below shows a farmer's field in the shape of a quadrilateral PQRS. The lengths of three of the field's sides are:

PQ is 110 meters.
QR is 76 meters.
PS is 132 meters.
The angles at two of the corners are:
Angle PQR = 98^0.
Angle PSR = 77^0.



(i) Find the distance across the field from P to R.
Give your answer correct to the nearest meter.

.....
(3 marks)

(ii) Find the area, in square meters, of the triangle PQR.
Give your answer correct to the nearest square meter.

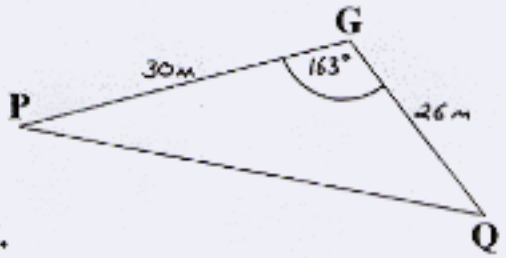
.....m^2
(2 marks)

(iii) Find the area of the complete field.
Give your answer correct to the nearest square meter.

.....m^2
(6 marks)

13. On a level beach there is a Life Guard at G.
In the water there are two swimmers, one at P and one at Q.

The swimmer at P is 30m from G.
The swimmer at Q is 26m from G.
The angle PGQ is 163 °.



(i) If the swimmer at P swims in a straight line to the swimmer at Q, find the distance from P to Q. Give your answer, in meters, correct to 2 decimal places.

.....m
(3 marks)

(ii) When the swimmer at P swims along the line PQ, there is a point (call it S) which is the nearest point possible to the Life Guard at G.
Calculate the distance G to S.
Give your answer, in meters, correct to 2 decimal places.

.....m
(5 marks)