14. (a)  

Calculate the value of $h$.
Give your answer correct to 3 significant figures.

$$h = \ldots \ldots \ldots \ldots$$

(b)  

Diagram NOT accurately drawn

Calculate the area of the triangle.
Give your answer correct to 3 significant figures.

$\ldots \ldots \ldots \ldots \text{cm}^2$

(Total 6 marks)
15. Calculate the length of \( AC \).
   Give your answer correct to 3 significant figures.

16. A triangle has sides of length 5 cm, 6 cm and 9 cm.
   Calculate the value of \( x \).
   Give your answer correct to 3 significant figures.
14.

The diagram shows a circle of radius 4 cm inside a square $ABCD$ of side 8 cm. $P$ is a point of intersection of the circle and the diagonal $AC$ of the square.

(a) Show that $AP = 1.66$ cm, correct to 3 significant figures.

(b) Calculate the length of $DP$.
   Give your answer correct to 3 significant figures.

................................ cm

(Total 7 marks)
$BC = 9.4 \text{ cm.}$

Angle $BAC = 123^\circ$.

Angle $ABC = 35^\circ$.

(a) Calculate the length of $AC$.

Give your answer correct to 3 significant figures.

............................... cm

(3)

(b) Calculate the area of triangle $ABC$.

Give your answer correct to 3 significant figures.

............................... cm$^2$

(3)

(Total 6 marks)
20. (a) Expand \((1 + \sqrt{3})^2\)

Give your answer in the form \(a + b\sqrt{3}\) where \(a\) and \(b\) are integers.

(b) \[ \triangle PQR \]

- \(P\) to \(Q\): 2 cm
- \(Q\) to \(R\): \((1 + \sqrt{3})\) cm
- \(\angle PQR = 60^\circ\)

Diagram \textbf{NOT} accurately drawn

Calculate the exact length of \(PR\).
Give your answer as a surd.

\[ \text{cm} \]

(4) Q20

(Total 6 marks)

PLEASE TURN OVER FOR QUESTION 21
22. The area of the triangle is 12 cm².
The angle at $x$ is obtuse.
Calculate the value of $x$.

\[ x = \ldots \ldots \ldots \ldots \ldots \ldots \ \text{(Total 4 marks)} \]

21. The diagram shows the length, in centimetres, of each side of triangle $ABC$.
Angle $BAC = 60^\circ$.
Find the value of $x$.

\[ x = \ldots \ldots \ldots \ldots \ldots \ldots \ \text{(Total 5 marks)} \]
$ABC$ is an isosceles triangle.
$AB = AC = 1$
$M$ is the midpoint of $BC$.

(a) (i) Use trigonometry to find an expression, in terms of $x$, for $BM$.

........................................

(ii) Hence write down an expression, in terms of $x$, for $BC$.

........................................ (2)

(b) Use the cosine rule to find an expression, in terms of $\cos (2x)$, for $BC^2$.

........................................ (1)

(c) Hence show that $\cos (2x) = 1 - 2(\sin x)^2$

........................................ (2)

(Total 5 marks)