Chapter 1

GCSE Questions - Right-Angled Triangles

1. ABC is an isosceles triangle.

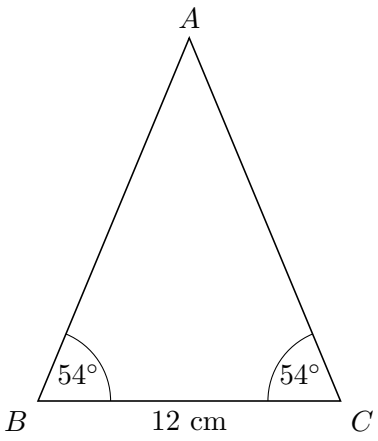

Diagram **NOT** accurately drawn

Work out the area of the triangle. Give your answer correct to 3 significant figures. **(4)**

.....cm^2

2. Here is a right-angled triangle.

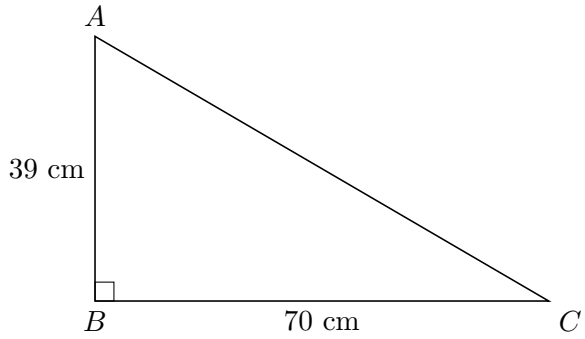

Diagram **NOT** accurately drawn

Work out the length of AC. Give your answer correct to 1 decimal place. **(3)**

.....cm

3.

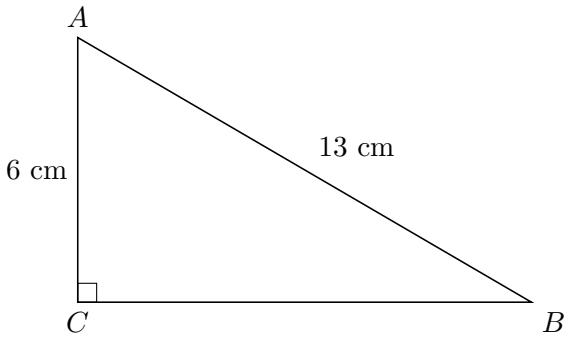

Diagram **NOT** accurately drawn

ABC is a right-angled triangle.

$AC = 6$ cm

$AB = 13$ cm

(a) Work out the length of BC. Give your answer correct to 3 significant figures. **(3)**

.....cm

(b)

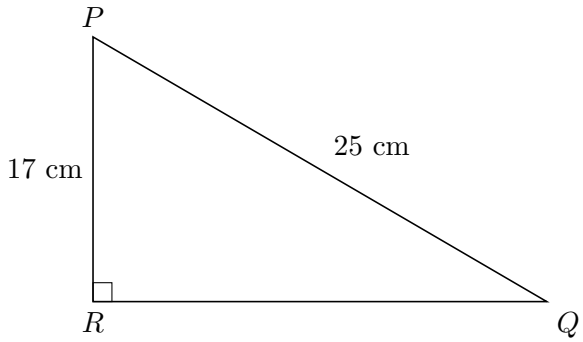

Diagram **NOT** accurately drawn

PQR is a right-angled triangle.

$R = 17$ cm

$PQ = 25$ cm

Work out the size of angle RPQ. Give your answer correct to 1 decimal place. **(3)**

.....°

4. The diagram shows a ladder leaning against a vertical wall.

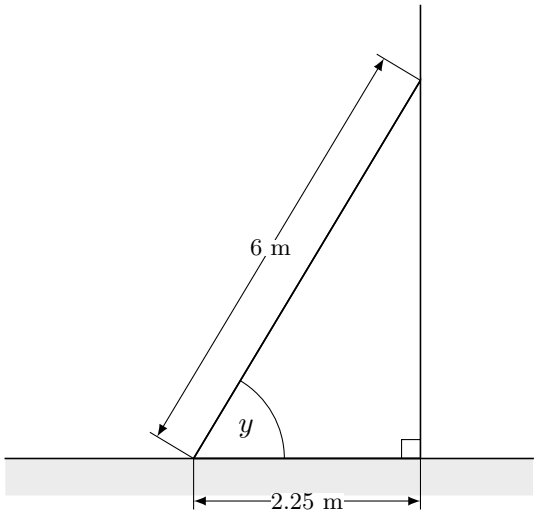

Diagram **NOT** accurately drawn

The ladder stands on horizontal ground. The length of the ladder is 6 m. The bottom of the ladder is 2.25 m from the bottom of the wall. A ladder is safe to use when the angle marked y is about 75°.

Is the ladder safe to use? You must show all your working. **(4)**

5. XYZ is a right-angled triangle.

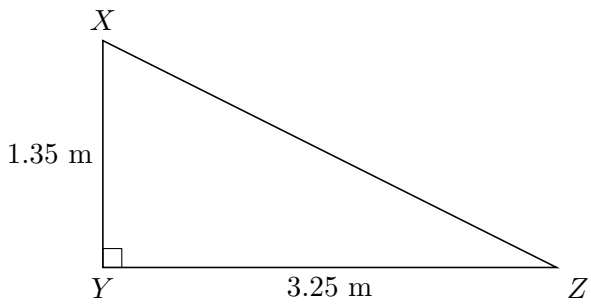

Diagram **NOT** accurately drawn

Calculate the length of XZ. Give your answer correct to 3 significant figures. **(3)**

.....m

6.

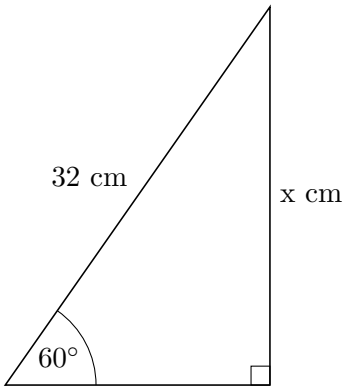

Diagram **NOT** accurately drawn

Calculate the value of x. Give your answer correct to 3 significant figures. **(3)**

.....

7. $ABCD$ is a trapezium

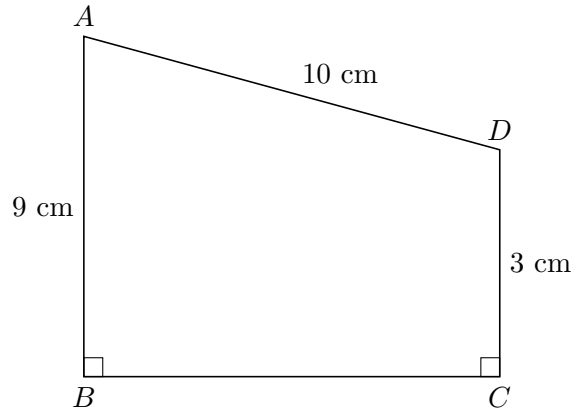

Diagram **NOT** accurately drawn

$AD = 10$ cm

$AB = 9$ cm

$DC = 3$ cm

Angle ABC = angle $BCD = 90°$ Calculate the length of AC. Give your answer correct to 3 significant figures. **(5)**

.....cm

8. (a) PQR is a right-angled triangle.

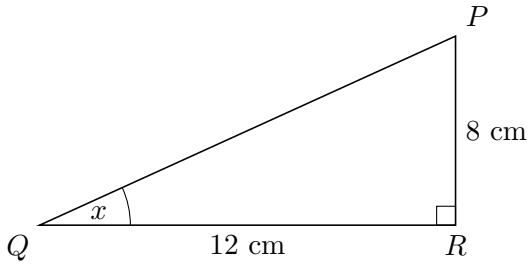

Diagram **NOT** accurately drawn

$PR = 8$ cm.

$QR = 12$ cm Find the size of the angle marked x. Give your answer correct to 1 decimal place. **(3)**

.....°

(b) XYZ is a different right-angled triangle.

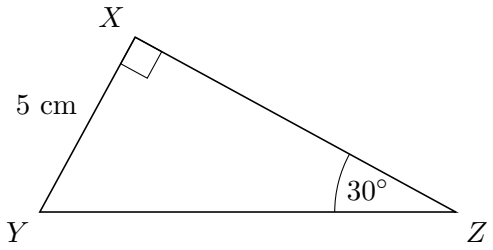

Diagram **NOT** accurately drawn

$XY = 5$ cm. Angle $Z = 32°$.

Calculate the length YZ. Give your answer correct to 3 significant figures. **(3)**

.....cm

9.

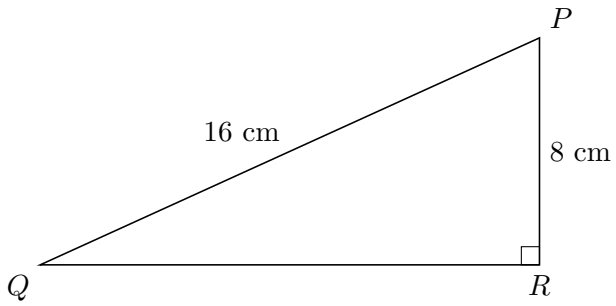

Diagram **NOT** accurately drawn

PQR is a right-angled triangle.

$PQ = 16$ cm. $PR = 8$ cm.

Calculate the length of QR. Give your answer correct to 2 decimal places. **(3)**

.....cm

10. The diagram shows a quadrilateral $ABCD$.

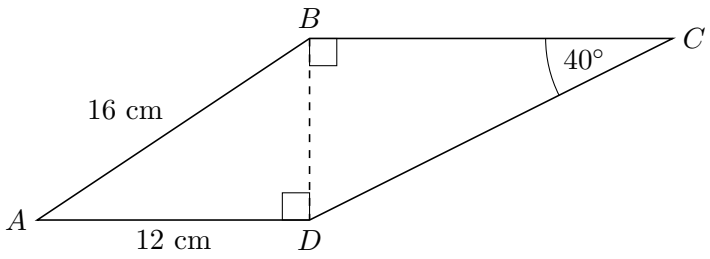

Diagram **NOT** accurately drawn

$AB = 16$ cm. $AD = 12$ cm. Angle $BCD = 40°$. Angle $ADB =$angle $CBD = 90°$.

Calculate the length of CD. Give your answer correct to 3 significant figures. **(5)**

.....cm

11.

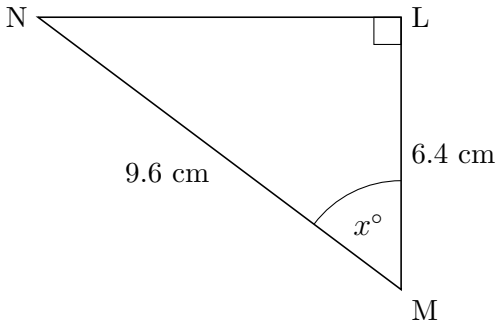

Diagram **NOT** accurately drawn

LMN is a right-angled triangle. $MN = 9.6$ cm. $LM = 6.4$ cm.

Calculate the size of the angle marked $x°$. Give your answer correct to 1 decimal place.

(3)

.....cm

12. The diagrams show a right-angled triangle and a rectangle

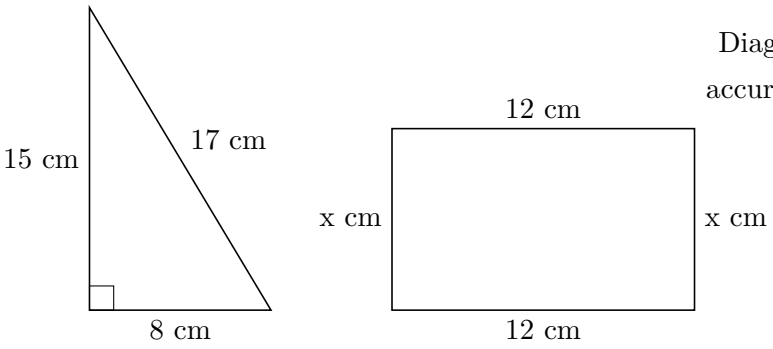

Diagram **NOT** accurately drawn

The area of the right-angled triangle is equal to the area of the rectangle. Find the value of x. **(4)**

x=.....

13.

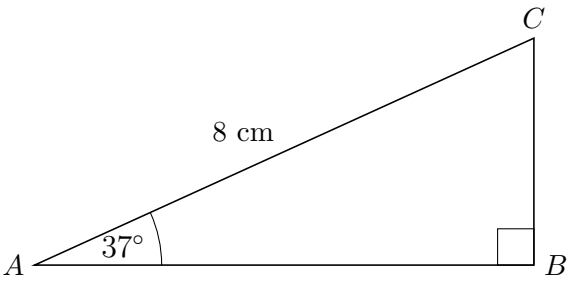

Diagram **NOT** accurately drawn

ABC is a right-angled triangle.

$AC = 8$ m.

Angle $CAB = 37°$.

Calculate the length of AB. Give your answer correct to 3 significant figures. **(3)**

.....m.

14. The diagram shows triangle LMN.

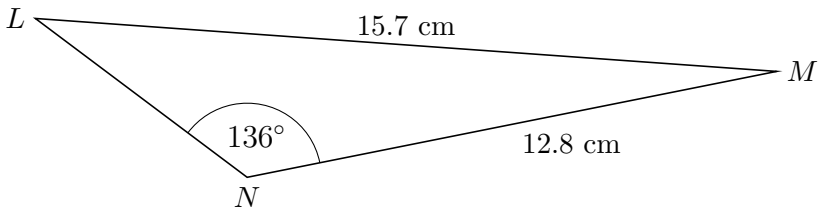

Diagram **NOT** accurately drawn

Calculate the length of LN. Give your answer correct to 3 significant figures. **(5)**

.....cm.

15. Here are two triangles **T1** and **T2**

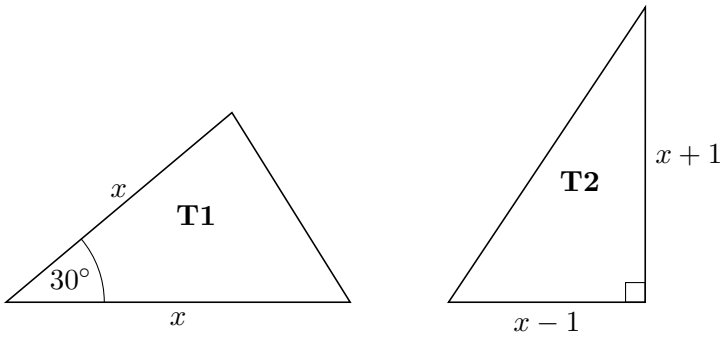

Diagram **NOT** accurately drawn

The lengths of the sides are in centimetres. The area of triangle **T1** is equal to the area of triangle **T2**. Work out the value of x, giving your answer in the form $a + \sqrt{x}$ where a and b are integers. **(5)**

16.

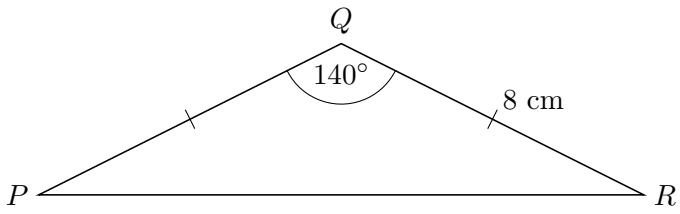

Diagram **NOT** accurately drawn

Calculate the length of PR. Give your answer correct to 3 significant figures. **(3)**

.....cm.

17. ABC is a triangle

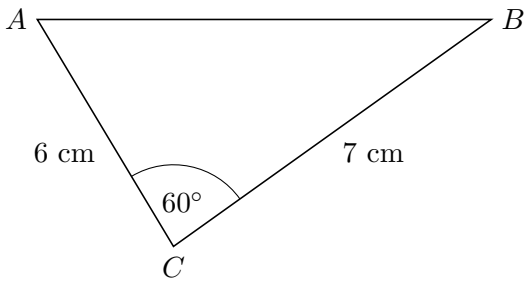

Diagram **NOT** accurately drawn

(a) Work out the area of triangle ABC. Give your answer correct to 3 significant figures.

(2)

.....cm^2.

(b) Work out the length of the side AB. Give your answer correct to 3 significant figures.

(2)

.....cm.

18. The diagram shows the triangle PQR.

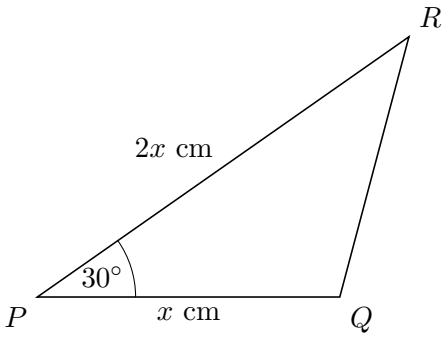

Diagram **NOT** accurately drawn

$PQ = x$ cm. $PR = 2x$ cm. Angle $QPR = 30°$. The area of triangle $PQR = A$ cm^2.

Show that $x = \sqrt{2A}$. **(2)**

19. Here is a triangle ABC.

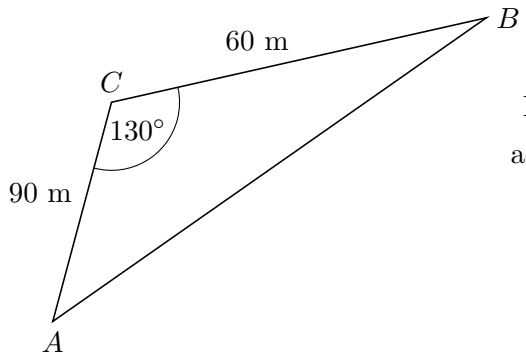

Diagram **NOT** accurately drawn

$AC = 90$ m. $BC = 60$ m. Angle $ACB = 130°$.

Calculate the perimeter of the triangle. Give your answer correct to one decimal place.

(4)

.....m.

20.

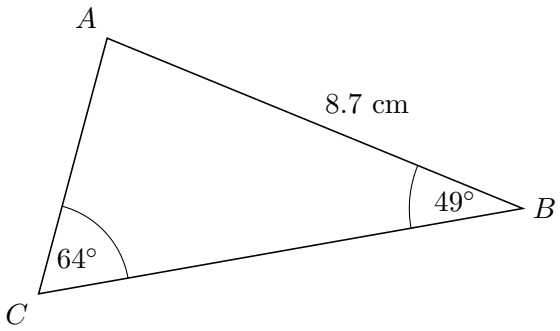

Diagram **NOT** accurately drawn

ABC is a triangle. $AB = 8.7$ cm. Angle $ABC = 49°$. Angle $ACB = 64°$.

Calculate the area of triangle ABC. Give your answer correct to 3 significant figures. **(5)**

.....cm^2.

21.

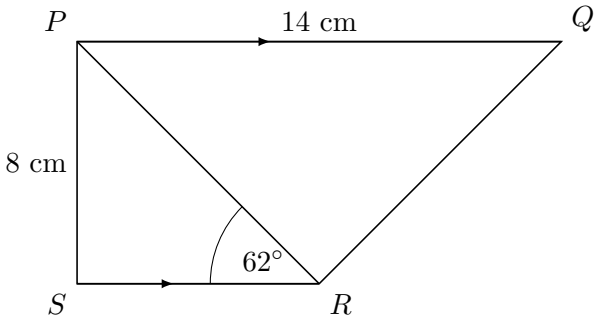

Diagram **NOT** accurately drawn

$PQRS$ is a trapezium. PQ is parallel to SR. Angle $PSR = 90°$. Angle $PRS = 62°$. $PQ = 14$ cm. $PS = 8$ cm.

(a) Work out the length of PR. Give your answer correct to 3 significant figures. **(3)**

.....cm.

(b) Work out the length of QR. Give your answer correct to 3 significant figures. **(3)**

.....cm.

22.

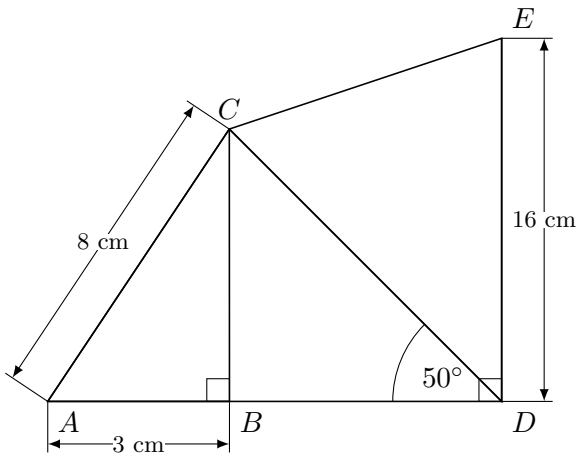

Diagram **NOT** accurately drawn

$AC = 8$ cm.

$AB = 3$ cm.

$DE = 19$ cm.

Angle ABC = angle CBD = angle $BDE = 90°$.

Angle $BDC = 50°$.

(a) Calculate the length of CD. Give your answer correct to 3 significant figures. **(4)**

.....cm.

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

.....cm.

23.

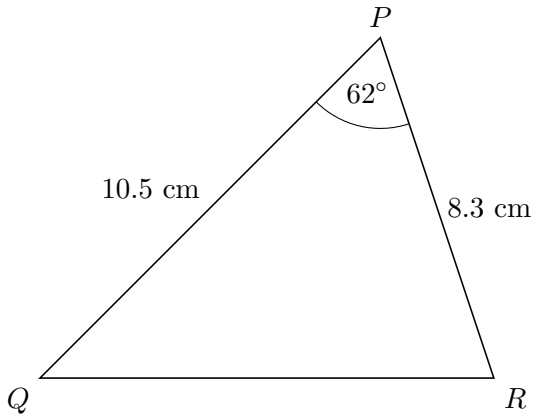

Diagram **NOT** accurately drawn

In triangle PQR,

$PQ = 10.5$ cm,

$PR = 8.3$ cm.

angle $QPR = 62$.

(a) Calculate the area of triangle PQR. Give your answer correct to 3 significant figures.

(2)

.....cm.

(b) Calculate the area of triangle PQR. Give your answer correct to 3 significant figures.

(3)

.....cm.