**1** The diagram shows parallelogram *EFGH*.

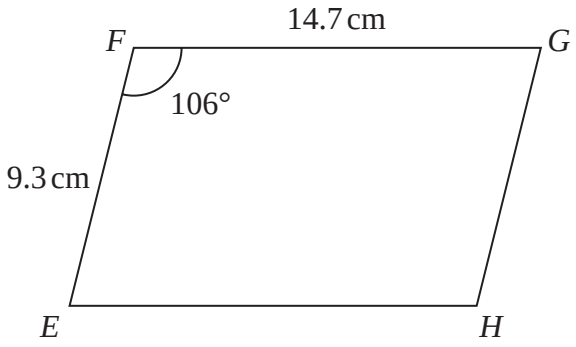


Diagram **NOT** accurately drawn

*EF* = 9.3 cm
*FG* = 14.7 cm
Angle *EFG* = 106°

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

..... $cm^2$
**(2)**

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

..... cm
**(3)**

**(Total for Question 1 is 5 marks)**

**2** Here is a right-angled triangle.

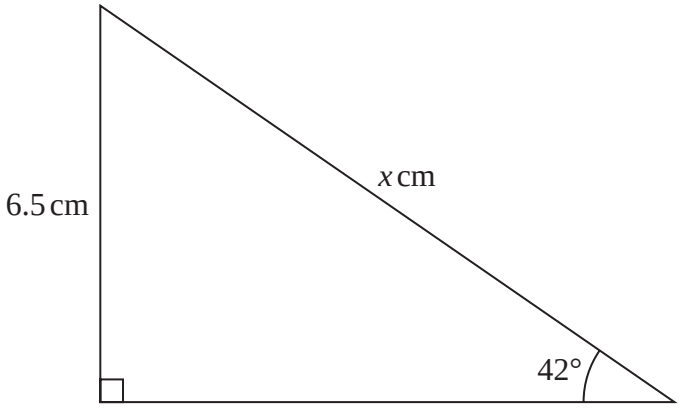


Diagram **NOT** accurately drawn

Work out the value of $x$.
Give your answer correct to one decimal place.

$x$ = .....

**(Total for Question 2 is 3 marks)**

**3**

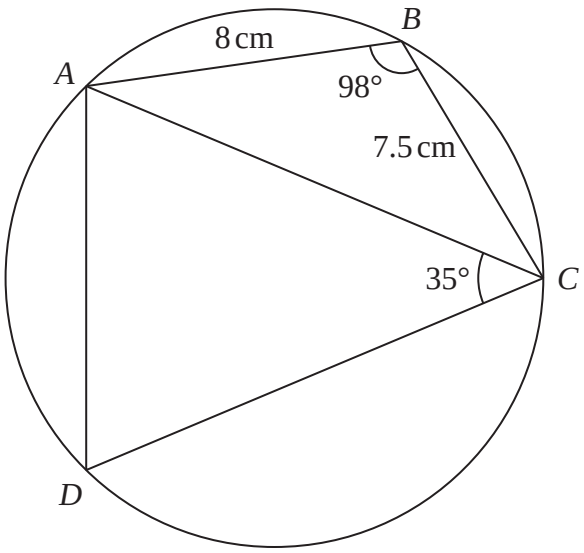


Diagram **NOT** accurately drawn

*ABCD* is a quadrilateral where *A*, *B*, *C* and *D* are points on a circle.

*AB* = 8 cm
*BC* = 7.5 cm
Angle *ABC* = 98°
Angle *ACD* = 35°

Work out the perimeter of quadrilateral *ABCD*.
Give your answer correct to one decimal place.

..... cm

**(Total for Question 3 is 6 marks)**

**4** The diagram shows the positions of three ships, *A*, *B* and *C*.

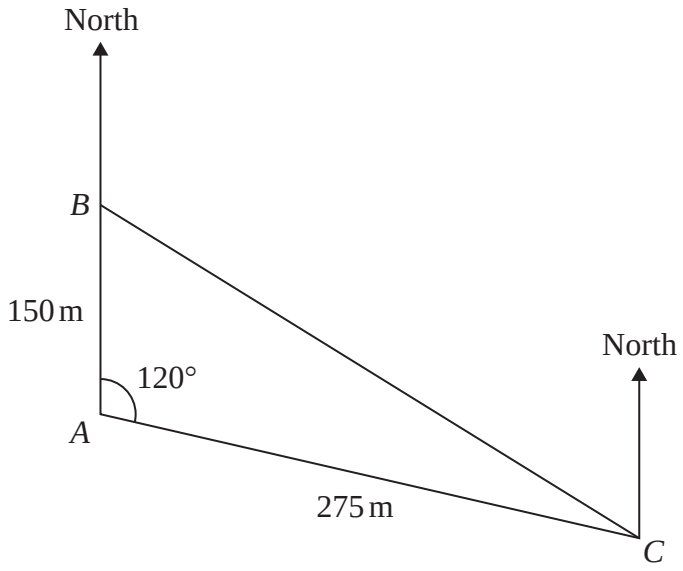


Diagram **NOT** accurately drawn

Ship *B* is due north of ship *A*.

The bearing of ship *C* from ship *A* is 120°

Calculate the bearing of ship *C* from ship *B*.
Give your answer correct to the nearest degree.

°

.....

**(Total for Question 4 is 5 marks)**

**5** The diagram shows a sector $OBC$ of a circle with centre $O$ and radius $(6 + x)$ cm.

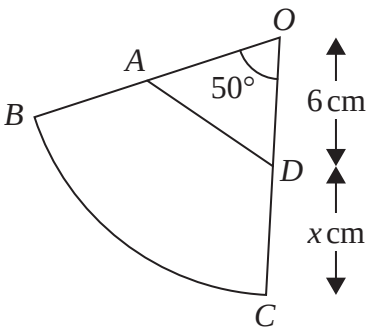


Diagram **NOT** accurately drawn

$A$ is the point on $OB$ and $D$ is the point on $OC$ such that $OA = OD = 6$ cm

Angle $BOC = 50°$

Given that

the perimeter of sector $OBC = 2 \times$ the perimeter of triangle $OAD$

find the value of $x$.
Give your answer correct to 3 significant figures.

$x$ = .....

**(Total for Question 5 is 6 marks)**

**6** Here is triangle *ABC*

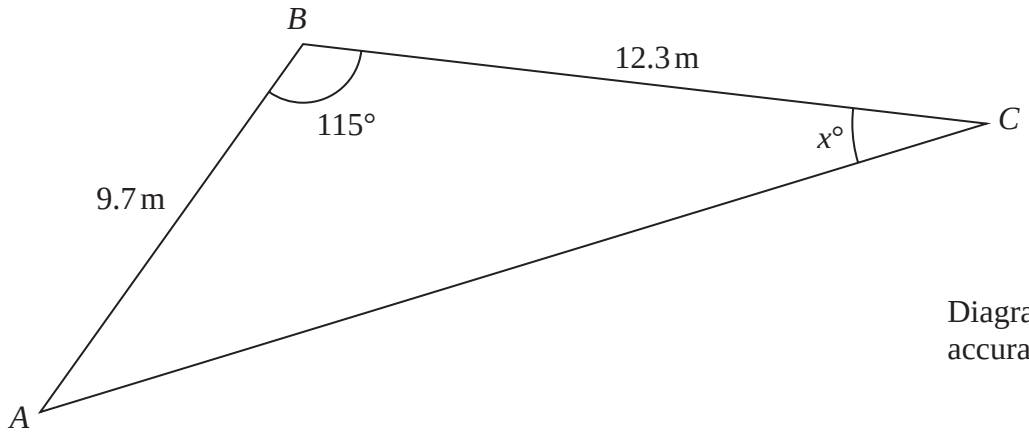


Diagram **NOT** accurately drawn

Work out the value of $x$
Give your answer correct to 3 significant figures.

$x =$ .....

**(Total for Question 6 is 5 marks)**

**7** The diagram shows quadrilateral *ABCD*

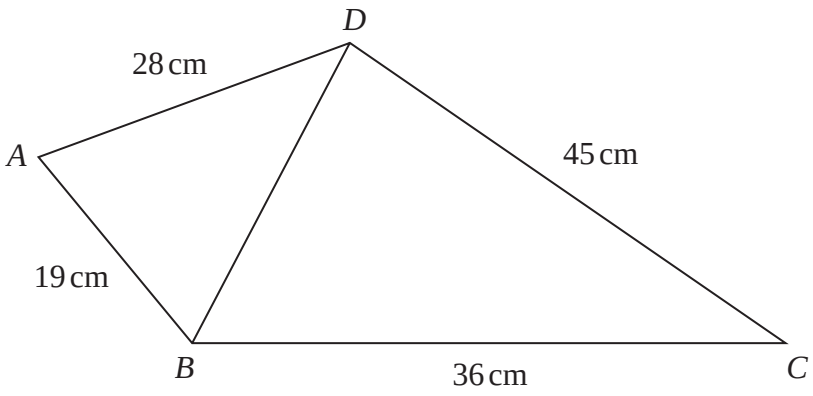


Diagram **NOT** accurately drawn

The angle *BCD* is acute.

Given that the area of triangle *BCD* = 405 cm$^2$

work out the size of angle *ABD*
Give your answer correct to one decimal place.

.....°

**(Total for Question 7 is 5 marks)**

**8** The diagram shows triangle *ABC*

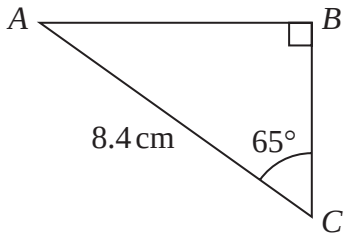


Diagram **NOT** accurately drawn

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

..... cm

**(Total for Question 8 is 3 marks)**

**9** The diagram shows triangle *PQR*

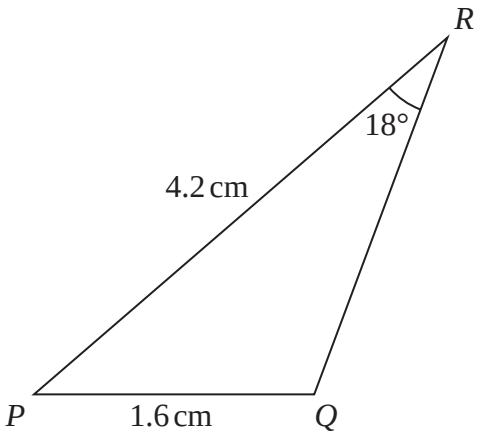


Diagram **NOT** accurately drawn

$PQ = 1.6\,\text{cm}$ $PR = 4.2\,\text{cm}$ Angle $PRQ = 18°$

Given that angle *PQR* is obtuse,

work out the area of triangle *PQR*
Give your answer correct to 3 significant figures.

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

**(Total for Question 9 is 6 marks)**

**10** *AEC* and *BED* are chords of a circle.

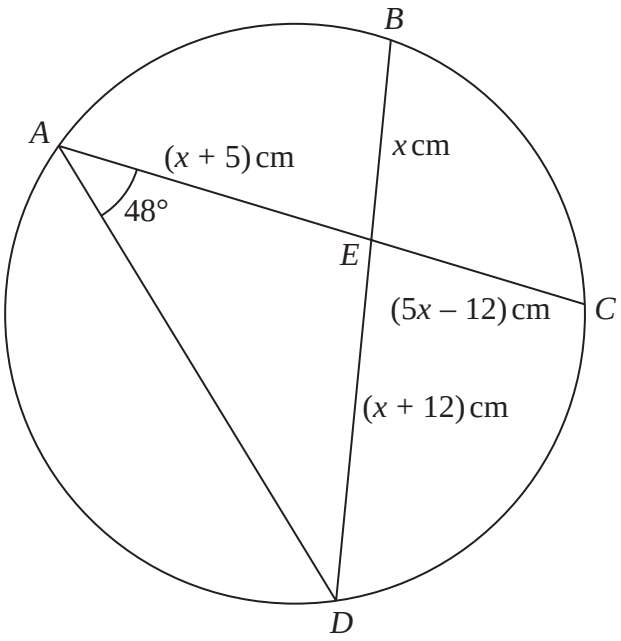


Diagram **NOT** accurately drawn

$AE = (x + 5)$ cm $\quad BE = x$ cm $\quad CE = (5x - 12)$ cm $\quad DE = (x + 12)$ cm

Angle $DAE = 48°$

Work out the size of angle *ADE*
Give your answer correct to one decimal place.

.....°

**(Total for Question 10 is 5 marks)**

**11** Here is a shape formed from two triangles *ABC* and *CDE*
*ACD* and *BCE* are straight lines.

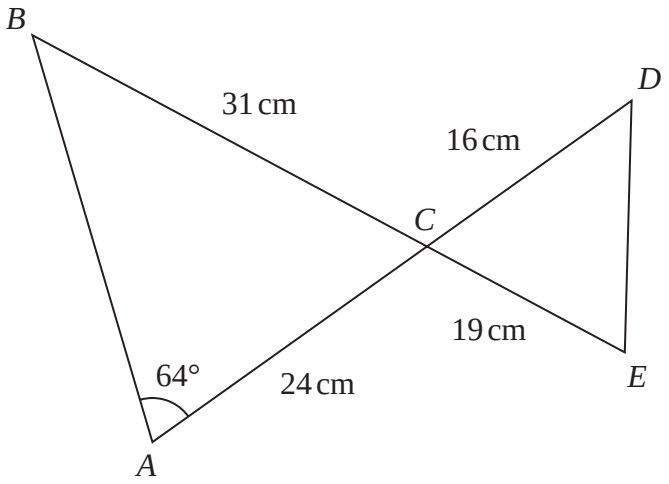


Diagram **NOT** accurately drawn

*AC* = 24 cm *BC* = 31 cm *CE* = 19 cm *CD* = 16 cm

Angle *BAC* = 64°

Work out the length of *DE*
Give your answer correct to 3 significant figures.

..... cm

**(Total for Question 11 is 5 marks)**

**12** Here is a triangle *ABC*

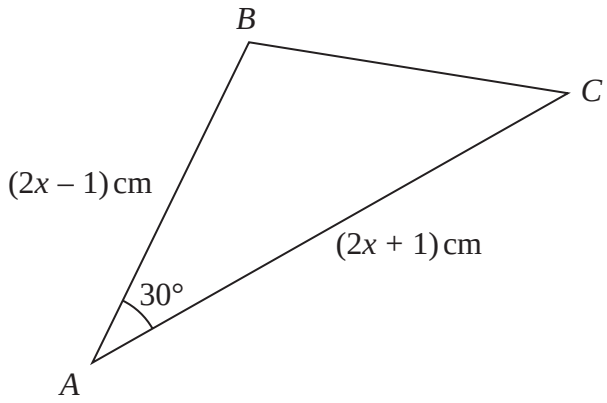


Diagram **NOT** accurately drawn

The area of the triangle is $(x^2 + x - 3.75)\,\text{cm}^2$

Find the size of the largest angle in triangle *ABC*
Give your answer correct to the nearest degree.

°

.....

**(Total for Question 12 is 6 marks)**

**13** The diagram shows a triangle *ABC* and a flagpole *BF*

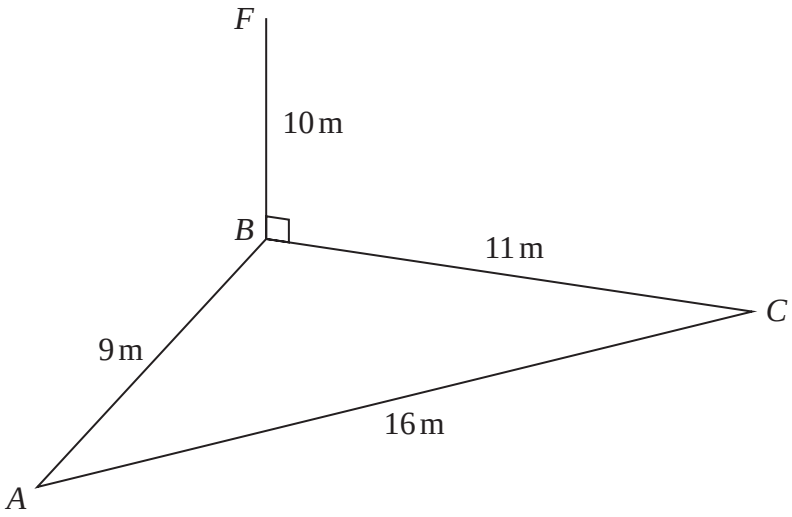


Diagram **NOT** accurately drawn

*A*, *B* and *C* are points on horizontal ground.

*BF* is vertical.

$AB = 9\,\text{m}$ $BC = 11\,\text{m}$ $AC = 16\,\text{m}$ $BF = 10\,\text{m}$

*D* is the point on *AC* such that angle *BDC* = 90°

Work out the size of the angle of elevation of the point *F* from the point *D*
Give your answer correct to one decimal place.

.....°

**(Total for Question 13 is 5 marks)**