Geometry 1H Assessment

THE ANSWERS

Higher Level  1 - 24  25 - 29

Clip	Grade	Title of clip	Question(s)	Marked out of	Score	%
48	2	Reflections	1	2	___	___
49	2	Rotations	1	2	___	___
50	2	Translations	1	2	___	___
51	2	Plans and Elevations	2	4	___	___
52	2	Perimeters	3	3	___	___
53	2	Area of a Rectangle.	4	4	___	___
54	2	Area of a Triangle	5	4	___	___
55	2	Area of a Parallelogram	6	2	___	___
56	2	Area of a Trapezium	7	2	___	___
112	3	Metric Conversions.	8	3	___	___
113	3	Problems on Coordinate Axes	9	3	___	___
114	3	Surface Area of a Prism.	10	6	___	___
115	3	Volume of a Cuboid	11	2	___	___
116	3	Circle Definitions.	12	2	___	___
117	3	Area of a Circle	13, 25, 26	7	___	___
118	3	Circumference of a Circle	14, 25	4	___	___
119	3	Volume of a Prism	15	2	___	___
120	3	Angles and Parallel Lines	16	3	___	___
121	3	Angles in a Triangle	17	2	___	___
122	3	Properties of Special Triangles	17	2	___	___
123	3	Angle Sum of Polygons.	18	2	___	___
124	3	Bearings	19	3	___	___
145	4	Bisecting an Angle	20	3	___	___
146	4	Constructing Perpendiculars	21	3	___	___
147	4	Draw a Triangle Using Compasses	22	3	___	___
148	4	Enlargements	23	3	___	___
149	4	Tangents, Arcs, Sectors and Segments	24	4	___	___
150	4	Pythagoras' Theorem	27 - 29	7	___	___

Out of 89 TOTAL SCORE _____

Final Percentage ____ %

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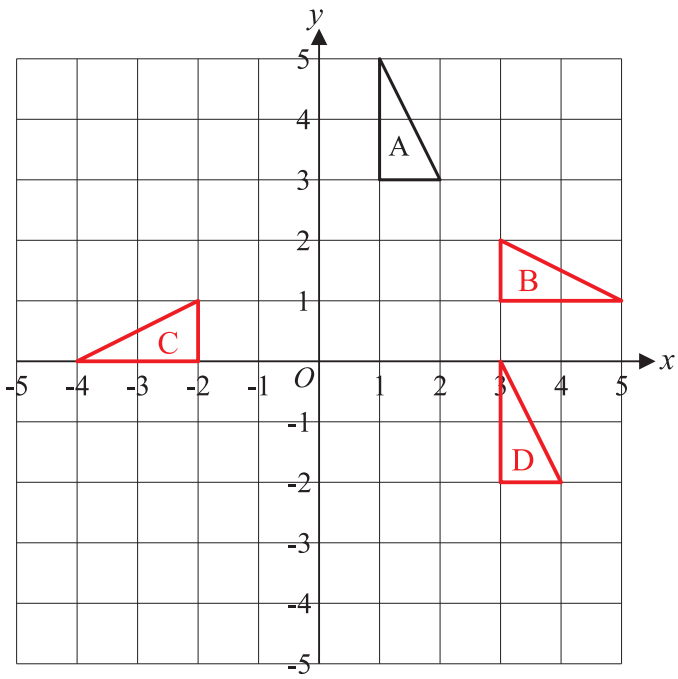
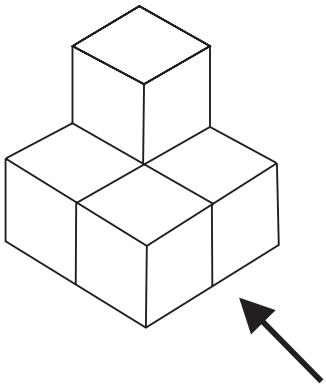
1) a) Reflect triangle A in the line $y = x$ and label it B. **2**

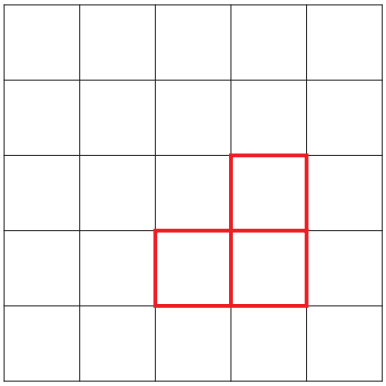
b) Rotate triangle A 90° anti-clockwise centre (1, 0) and label it C. **2**

c) Translate triangle A by vector $\begin{bmatrix} 2 \\ -5 \end{bmatrix}$ and label it D. **2**

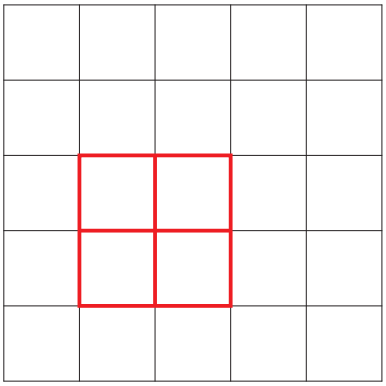


2) This solid object is made from five identical cm square cubes.





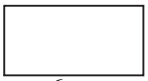
Elevation

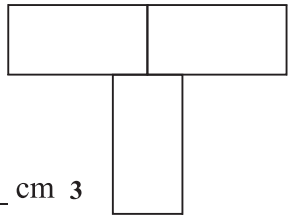


Plan

a) Draw the elevation of the object on the cm square grid from the direction marked with the arrow. **2**

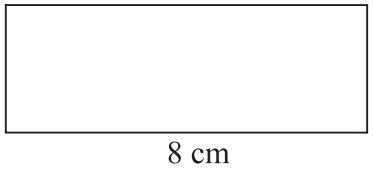
b) Draw the plan of the solid object on the cm square grid. **2**

3) Three rectangles like this 

are put together to make this shape. → 

What is the perimeter of the shape? 42 cm **3**

4) a) What is the area of this rectangle? 24 cm^2 **2**



b) If a rectangle has an area of 90 cm^2 and a length of 20 cm, what is the width of the rectangle? 4.5 cm **2**

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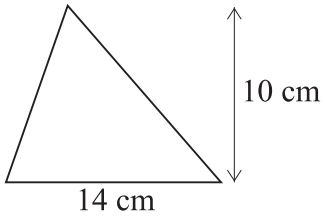
5) a) Find the area of this triangle

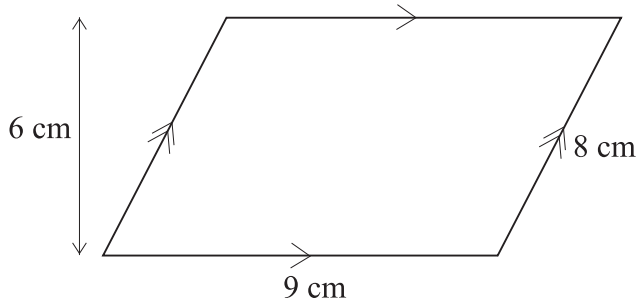
Area is 70 cm^2 **2**



b) If the base of a triangle has a length of 12 cm and an area of 60 cm^2 what is its height? 10 cm **2**

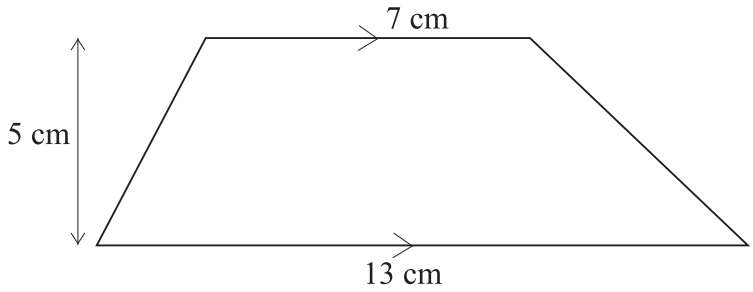
6) Find the area of this parallelogram.

Area is 54 cm^2 **2**



7) Find the area of this trapezium.

Area is 50 cm^2 **2**



8) a) Change 405 cm to metres. 4.05 m **1**

b) Change 2.3 kg to grams. 2300 g **1**

c) Change 4560 cm^3 to litres. 4.56 l **1**

9) The diagram shows three vertices of a parallelogram.

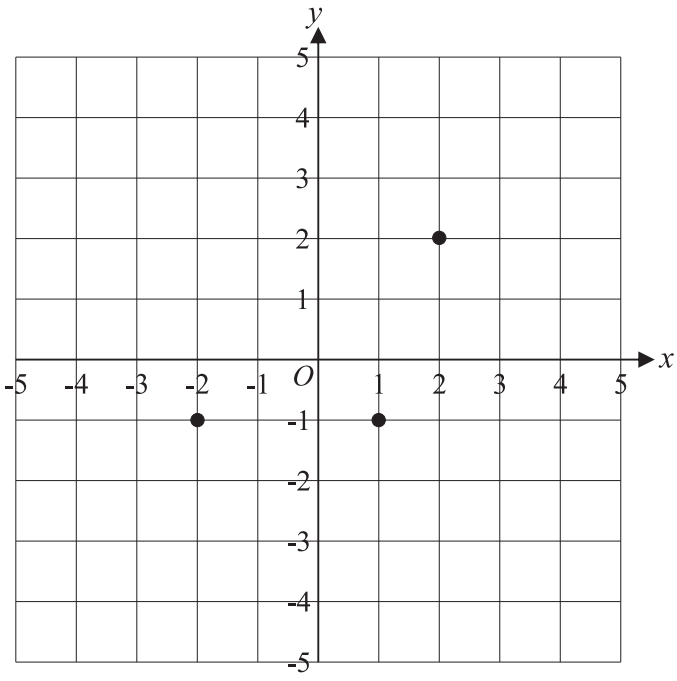
The fourth vertex can be in one of three possible places.

What are the coordinates of the three places?

Possibility 1: (5, 2) **1**

Possibility 2: (-1, 2) **1**

Possibility 3: (-3, -4) **1**



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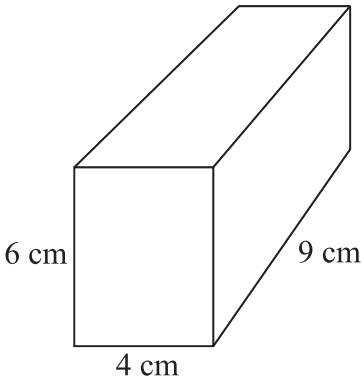
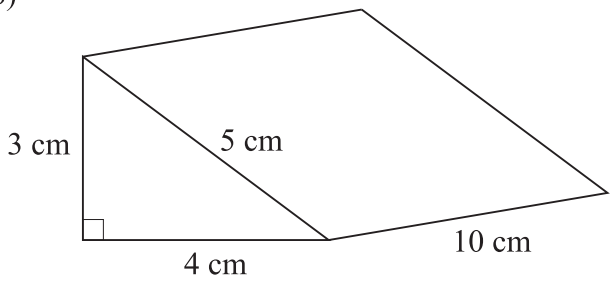
10) Below you will see a cuboid and a triangular prism.
Find the total surface area of each of them.

a)



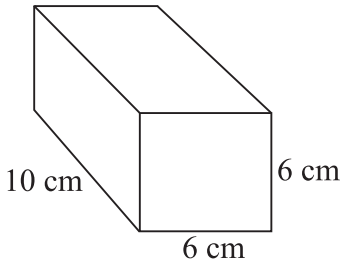
Total surface area = 228 cm^2 **3**

b)



Total surface area = 132 cm^2 **3**

11) What is the volume of this cuboid?

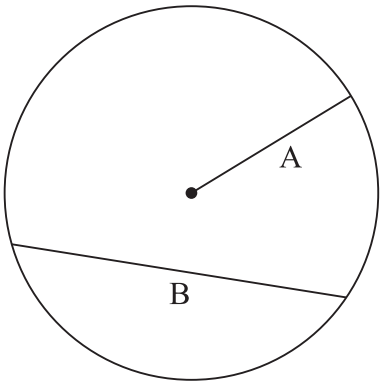


Volume is 360 cm^3 **2**

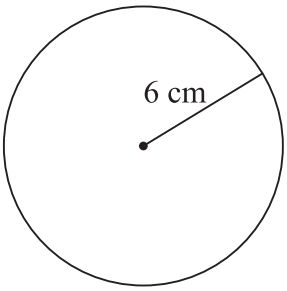
12) Fill in the blanks

a) Line A is a radius of the circle. **1**

b) Line B is a chord of the circle. **1**

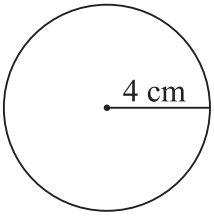


13) Find the area of this circle, leaving your answer in terms of π.



Area = 36π cm^2 **2**

14) Find the circumference of this circle, leaving your answer in terms of π.



Circumference = 8π cm **2**

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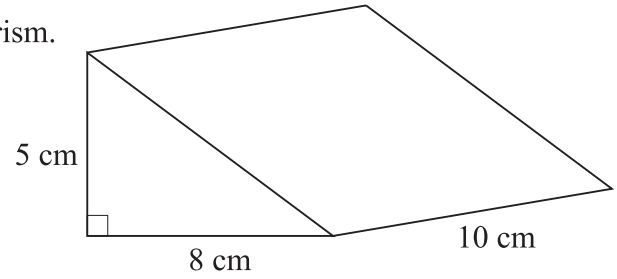
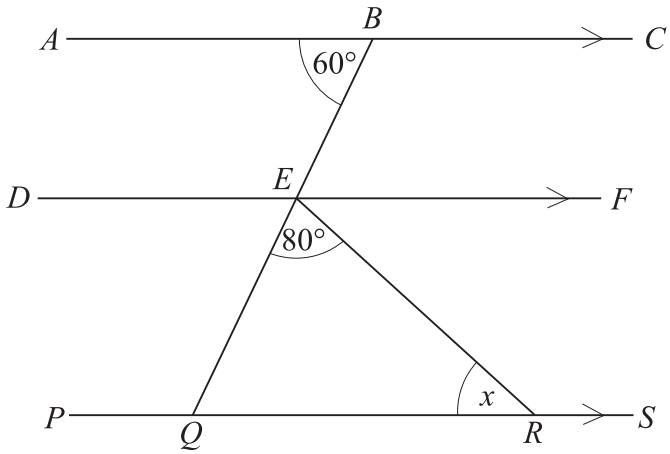
15) Find the volume of this triangular prism.



Volume is 200 cm^3 **2**

16) Work out the size of the angle marked x.

Give reasons for each stage of your working. **3**

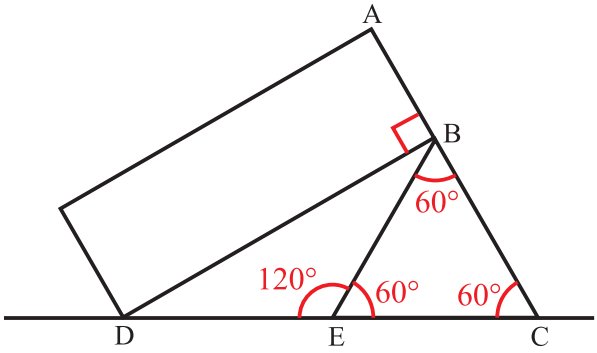


$x = 40°$ with two valid steps such as:

Angle $BQR = 60°$ (alternate angles)

$x = 40°$ (angles in triangle add up to 180°)

17) The diagram shows a rectangle which just touches an equilateral triangle so that ABC is a straight line.

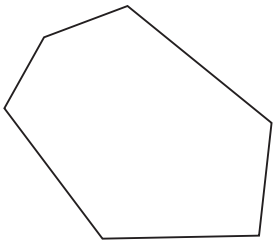


In the space below, show that triangle BDE is isosceles. **4**

Any sufficiently good explanations such as:

Equilateral triangle implies all three angles are 60°
Angle ABD is 90° because it is part of rectangle.
ABC is a straight line which means angle DBE is 30°
DEC is a straight line so DEB is 120°
Angles in triangle add up to 180° so angle BDE is 30°
DBE = 30° and BDE = 30° shows that triangle BDE is isosceles.

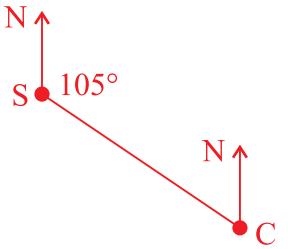
18) Find the sum of the internal angles of this hexagon.



Sum of the angles is 720 ° **2**

19) The bearing of a church from a school is 105°.

Make a sketch of this and use your sketch to help calculate the bearing of the school from the church.



The bearing of the school from the church is 285 ° **3**

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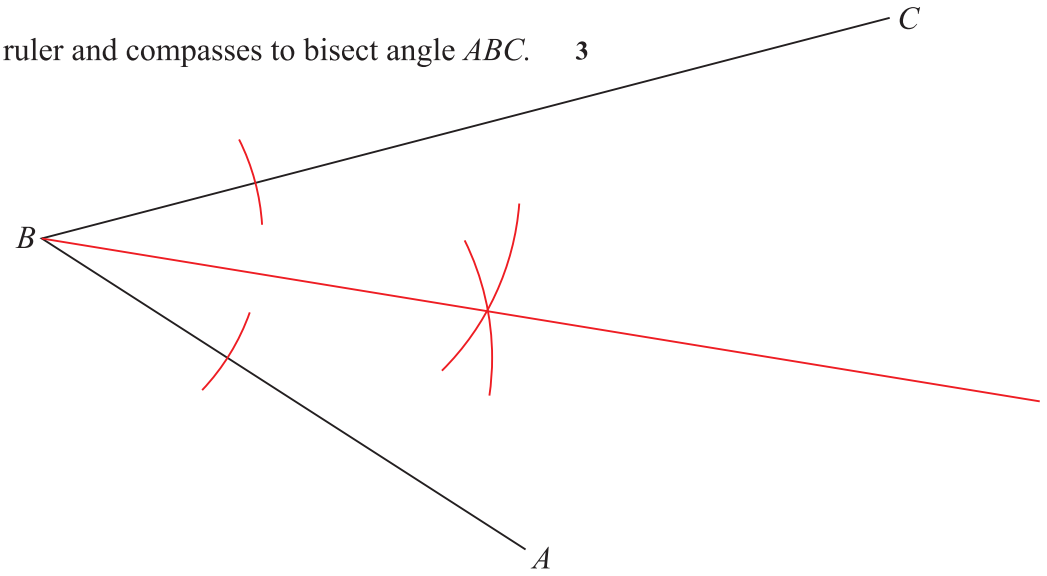
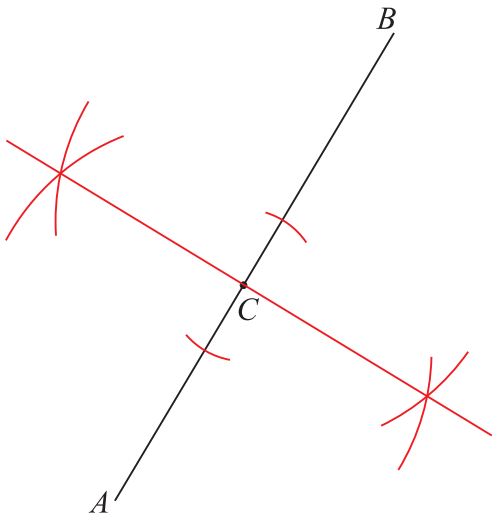
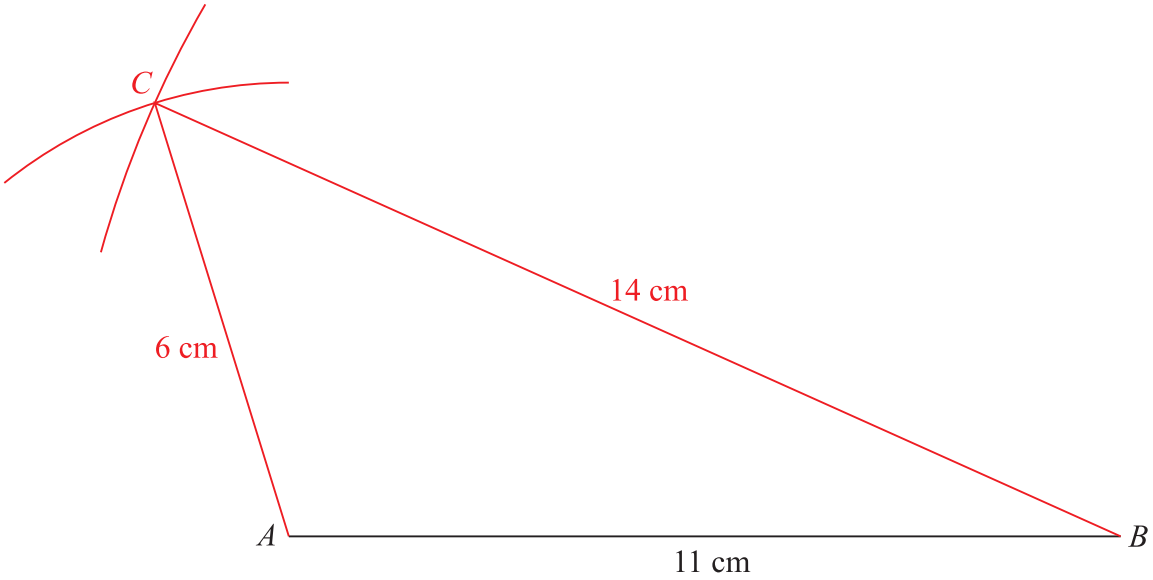
20) Use ruler and compasses to bisect angle ABC. **3**



21) Use ruler and compasses to draw a line which is perpendicular to line AB at point C. **3**



22) Use ruler and compasses to draw a triangle ABC with AB of length 11 cm, AC of length 6 cm and BC of length 14 cm.
The line AB has been drawn for you. **3**



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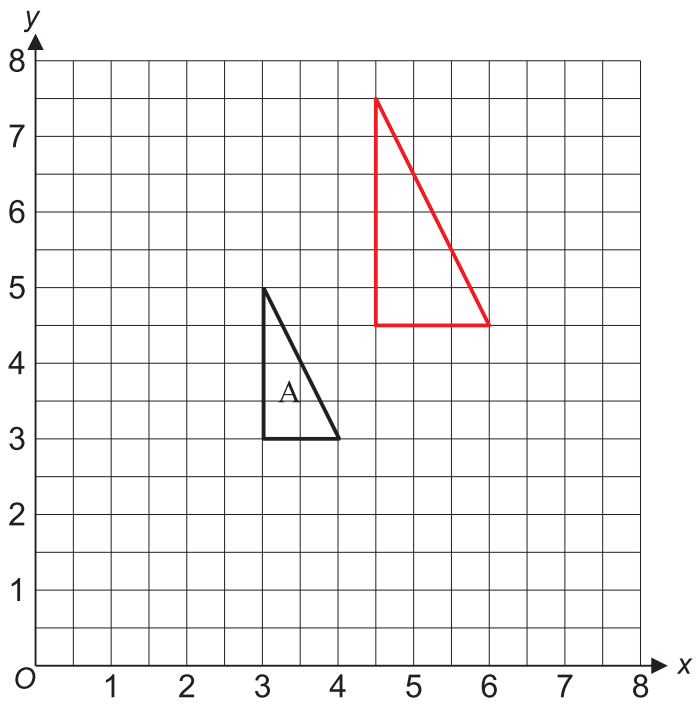
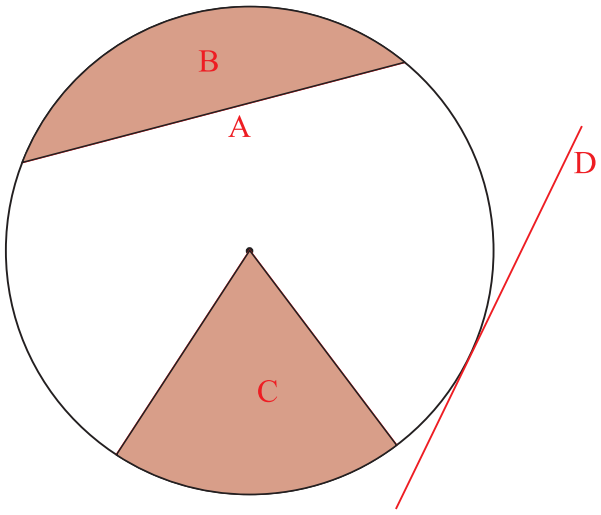
23) Enlarge triangle A by scale factor 1.5 centre *O*. **3**



24) In the circle below:



a) Draw a chord and label it A. **1**

b) Shade in a segment of the circle and label it B. **1**

c) Shade in any sector of the circle and label it C. **1**

d) Draw a tangent to the circle and label it D. **1**

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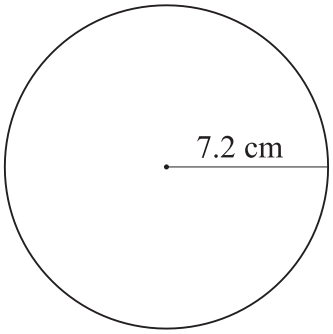
A  *can be used for all questions on this page.*

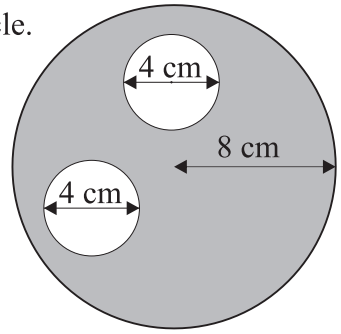
25) Find the area and the circumference of this circle.
Give your answers to 1 decimal place.



a) Area is 162.9 cm^2 **2**

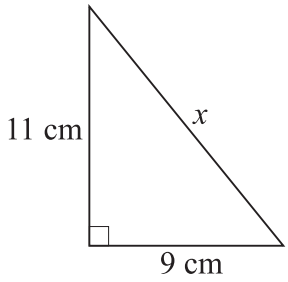
b) Circumference is 45.2 cm **2**

26) Find the area of the shaded region of the large circle.
Give your answer to 1 decimal place.



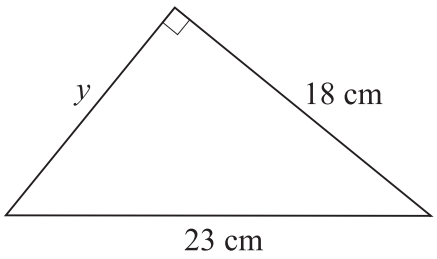
Area is 175.9 cm^2 **3**

27) Find the length of side x.
Give your answer to 1 decimal place.



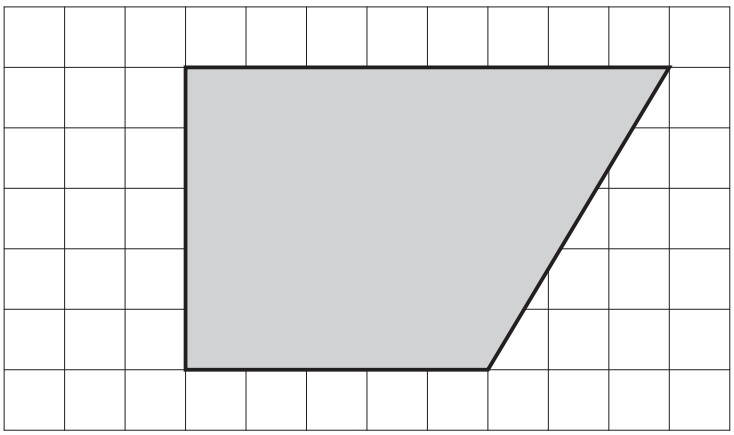
Length of side x is 14.2 cm **2**

28) Find the length of side y.
Give your answer to 1 decimal place.



Length of side y is 14.3 cm **2**

29) On the cm grid is a shaded tile.



Calculate the perimeter of the tile, giving your answer to 1 decimal place.

Perimeter is 23.8 cm **3**

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