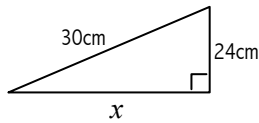
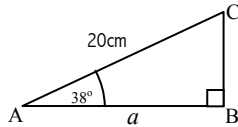
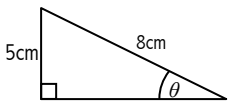


## DIAGNOSTIC Shape and Space TEST 1 of 2

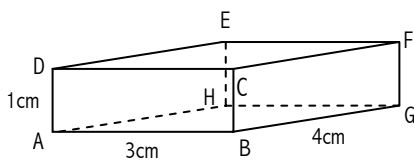
- 1) Calculate length  $x$ .



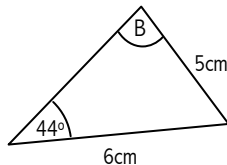
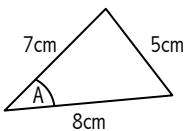
- 2) Calculate angle  $\theta$  and length  $a$ .



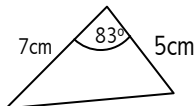
- 3) Calculate a) length BE b)  $\angle ABH$



- 4) Calculate angles A and B.



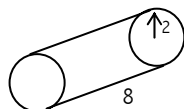
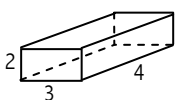
- 5) Calculate the area of this triangle.



- 6) The bearing of A from B is  $350^\circ$ , C from B is  $340^\circ$ . Length  $AB = BC$ , so  $\triangle ABC$  is isosceles.

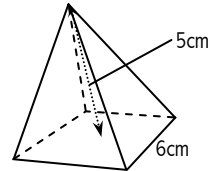
Find the bearing of A from C.

- 7) Calculate the surface area of the two solid shapes.

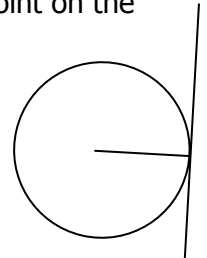


- 8) a) Calculate the volume of the two shapes in Q7.

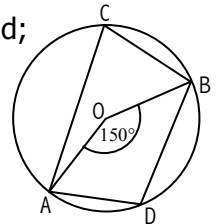
- b) Calculate the volume of the square based pyramid below. It has a base of side 6cm and perpendicular height of 5cm.



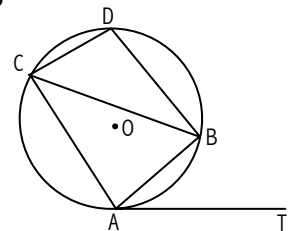
- 9) a) What is special about radii and tangents which meet at the same point on the circumference of a circle?



- b) Given that  $\angle AOB = 150^\circ$  find;  
i)  $\angle ACB$   
ii)  $\angle ADB$   
*O is the centre of the circle.*

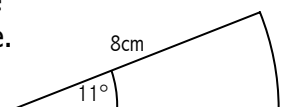


- c) From the alternate segment theorem what can you say about certain angles in the following diagram?



- 10) a) Sketch a segment of a circle.

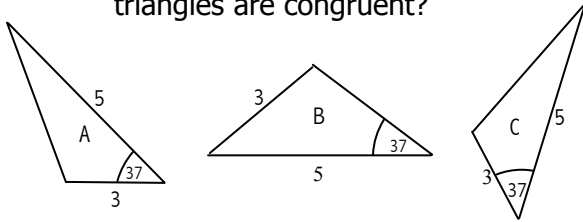
- b) Calculate the perimeter and area of the following shape.



Now mark your work and then mark your grid to see which sections you need to revise. For each question you got COMPLETELY correct mark a  $\checkmark$  in that section. For example if you got both parts of Q2 correct then put a  $\checkmark$  in section SS2, else but a  $\times$ . Revise each of your  $\times$  sections by working through the revision material provided.

## DIAGNOSTIC Shape and Space TEST 2 of 2

- 11) a) In congruency what does SSS stand for?  
 b) Giving a reason, which of the following triangles are congruent?

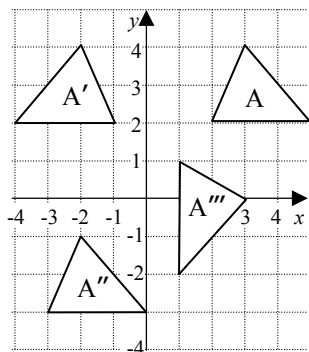


- 12) Sketch an angle of approximately  $20^\circ$ . Now by construction accurately bisect this angle.
- 13) Sketch the points A and B roughly. Now by construction, shade the region of all the points that are nearer to A than B.



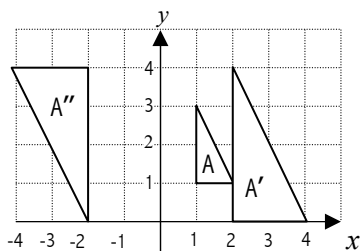
- 14) Describe the single transformation that takes

- i) A to A'  
 ii) A'' to A'''

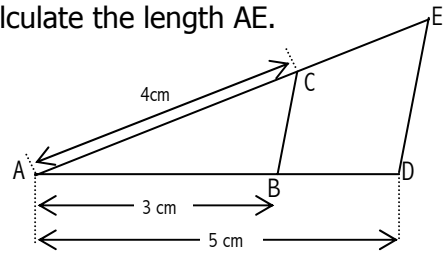


- 15) Describe the enlargement from

- i) A to A'  
 ii) A' to A  
 iii) A to A''  
 iv) A'' to A



- 16) Given that  $\triangle ABC$  is similar to  $\triangle ADE$ . Calculate the length AE.



- 17) Two similar solid ornaments have a base width of 3cm and 6cm and volumes of  $30\text{cm}^3$  and  $x\text{cm}^3$  respectively. Find  $x$ .
- 18) Given that  $a, b, c,$  are lengths decide whether the following formulae are measures of length, area or volume?

i)  $\frac{3b^2c}{a^2}$       ii)  $3\pi^3(a+b)c$

- 19)  $Speed = \frac{a}{b}$  and  $Density = \frac{c}{d}$

a) In the above formulae what do  $a, b, c$  and  $d$  stand for?

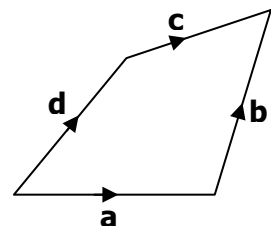
b) A solid stone has a mass of 32 kg and has a volume of  $6\text{cm}^3$ . Calculate the density of the stone.

- 20) Convert  $500,000\text{cm}^3$  to  $\text{m}^3$ .

- 21) i) a) Geometrically what is special about the two vectors  $\begin{pmatrix} 1 \\ 2 \end{pmatrix}$  and  $\begin{pmatrix} 5 \\ 10 \end{pmatrix}$ ?

b) Calculate  $3\begin{pmatrix} 1 \\ 2 \end{pmatrix} - 2\begin{pmatrix} 3 \\ 1 \end{pmatrix}$ .

- ii) Write vector  $\mathbf{d}$  in terms of  $\mathbf{a}, \mathbf{b}$  and  $\mathbf{c}$ .



Now mark your work and then mark your grid to see which sections you need to revise. For each question you got COMPLETELY correct mark a  $\checkmark$  in that section. For example if you got both parts of Q14 correct then put a  $\checkmark$  in section SS14, else but a  $\times$ . Revise each of your  $\times$  sections by working through the revision material provided.