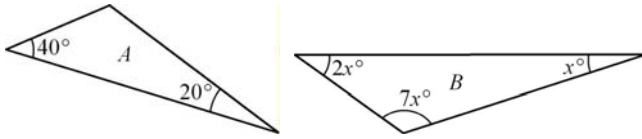
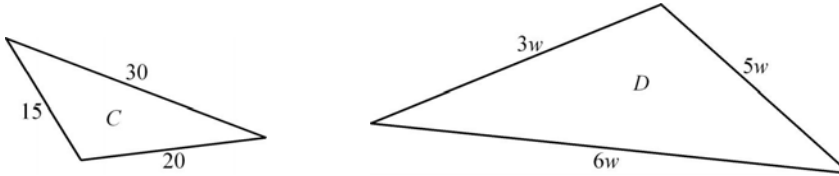


Practice Questions: Self-Study

1. Are triangles A and B in the diagram similar? Explain your answer.

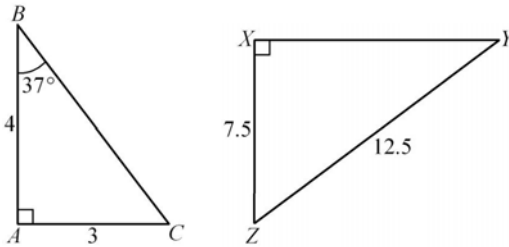


2. Are triangles C and D in the diagram similar? Explain your answer.



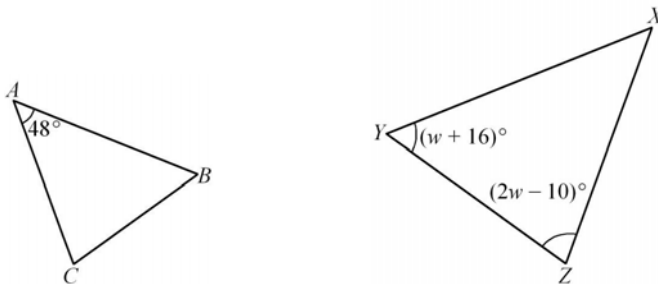
3. In the diagram, $\triangle ABC$ and $\triangle XYZ$ are similar. The dimensions given are in m.

- Find $\angle XZY$.
- Calculate the lengths of BC and XY .
- Find area $\triangle ABC$: area $\triangle XYZ$.

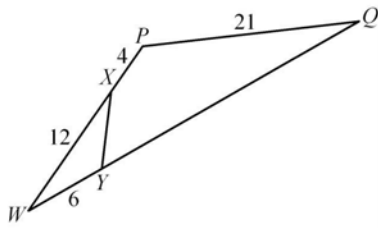


4. In the diagram, $\triangle ABC$ and $\triangle XYZ$ are similar.

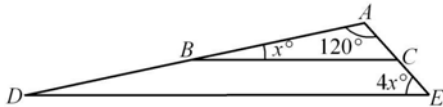
- Form an equation in w and solve it.
- Hence, find $\angle ABC$ and $\angle ACB$.
- Find and simplify $\frac{YZ}{BC}$ if AB is 2.4 cm and XY is 3.6 cm.



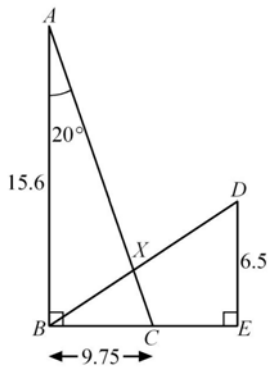
5. In the diagram, $\triangle WXY$ and $\triangle WQP$ are similar, $PX = 4$ cm, $WX = 12$ cm, $PQ = 21$ cm and $WY = 6$ cm. Find the length of
- XY ,
 - QY .



6. In the diagram, $\triangle ABC$ and $\triangle ADE$ are similar.
- Find
 - the value of x .
 - $\angle ACB$,
 - $\angle ADE$.
 - What can you conclude about the lines BC and DE ?



7. In the diagram, $\triangle ABC$ is similar to $\triangle BED$, $AB = 15.6$ cm, $BC = 9.75$ cm, $DE = 6.5$ cm, $\angle BAC = 38^\circ$ and BD and AC intersect at X .



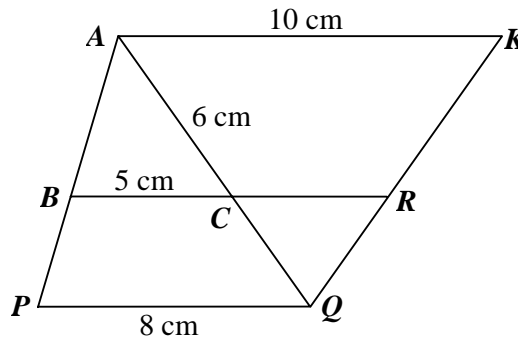
Find

- $\angle BDE$,
 - $\angle CXD$,
 - the scale factor of the enlargement of $\triangle BDE$ to $\triangle ACB$,
 - the area of $\triangle BED$.
8. Describe fully the symmetry of the figure.

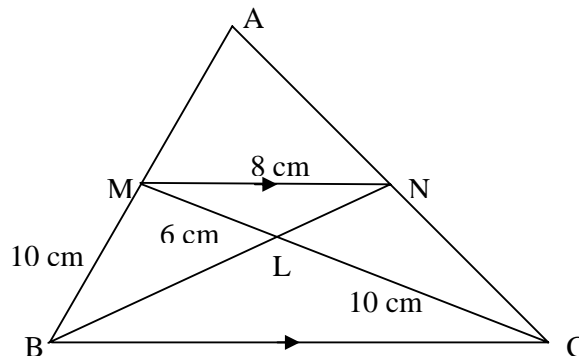


9. In the figure below, $\triangle ABC$ is similar to $\triangle APQ$ and $\triangle QCR$ is similar to $\triangle QAK$. Given that $BC = 5$ cm, $PQ = 8$ cm, $AC = 6$ cm and $AK = 10$ cm, calculate the length of

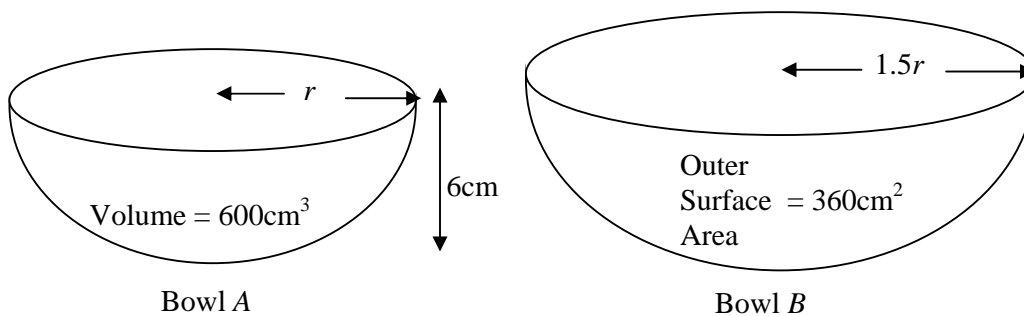
- (a) CQ ,
 (b) CR .



10. In the diagram, MN is parallel to BC .
 (a) State two pairs of similar triangles.
 (b) If $MN = 8$ cm, $ML = 6$ cm, $LC = MB = 10$ cm, find
 (i) BC ,
 (ii) AM .

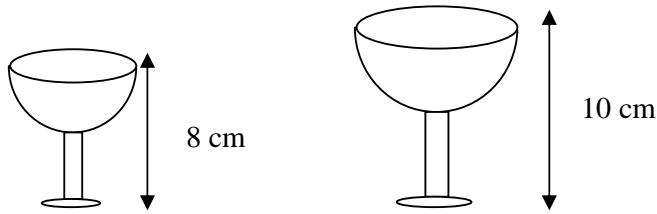


11. The radii of two symmetrical bowls are r and $1.5r$ respectively.
 (a) Given that the height of bowl A is 6 cm with the volume of 600 cm³ and the outer surface area of bowl B is 360 cm², find
 (i) the height of the bowl B ,
 (ii) the volume of the bowl B .
 (iii) the outer surface area of the bowl A



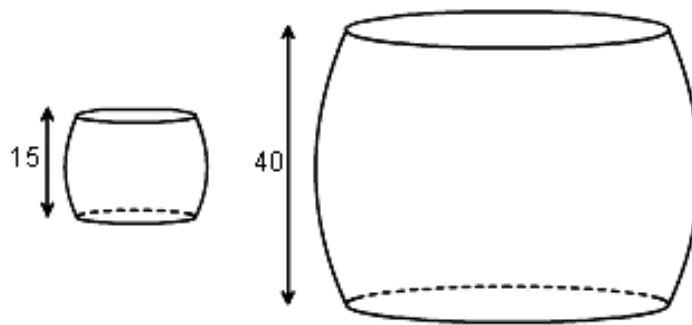
- (b) Bowl A , which weighs 400 g, is filled to the brim with cooking oil of density 0.75 g/cm³. Find the total weight of the bowl A filled with cooking oil.

12. Two glasses, with heights 8 cm and 10 cm respectively, are geometrically similar.



The top of the larger glass has a circumference of 55 cm. Find the circumference of the top of the smaller glass. Hence, find the radius of the smaller glass.

13. The two containers shown in the diagram are geometrically similar. Their heights are 15 cm and 40 cm.



- (a) The radius of the base of the smaller container is 9 cm. Calculate the radius of the base of the larger container.
- (b) Find the ratio of the volume of the smaller container to the larger container. Give your answer as a fraction in its lowest term.
- (c) The containers are completely filled with rice. Given that the larger container holds 128 kg of rice. Calculate the mass of rice the smaller container holds.