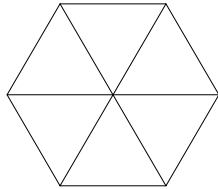


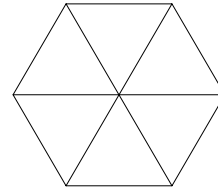
Q1 Describe the symmetry properties of a parallelogram. [2]

Q2 In the diagram, shade two of the small triangles so that
(i) the figure has 2 lines of symmetry, [1]
(ii) the figure has 1 line of symmetry. [1]

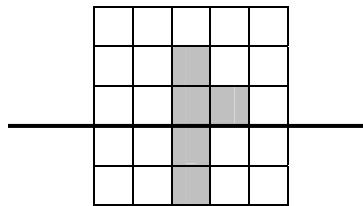
(i)



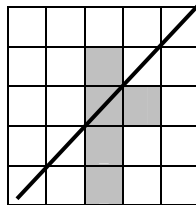
(ii)



Q3(a) Shade in 1 more square to make a shape which has the line as a line of symmetry. [1]

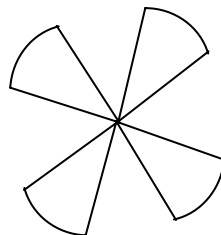


(b) Shade in 2 more squares to make a shape that has the line as a line of symmetry. [1]

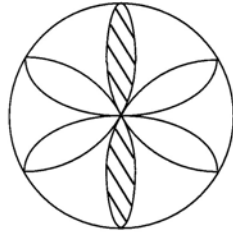


Q4 Write down the order of rotational symmetry for the following. [2]

(a)

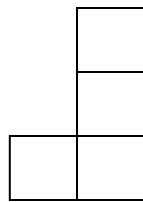


(b)



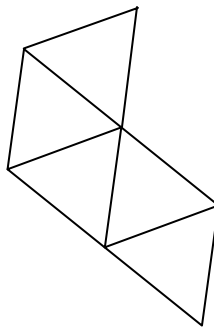
Q5(a) Add one square to the given diagram below so that there is exactly one line of symmetry. Show clearly also the line of symmetry.

[2]



(b) Add one equilateral triangle to the figure below so that the resulting figure has rotational symmetry.

[1]



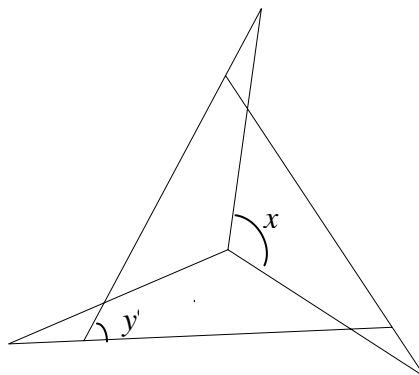
Q6 The figure below has rotational symmetry of order k . Find the values of

(a) k ,

(b) x ,

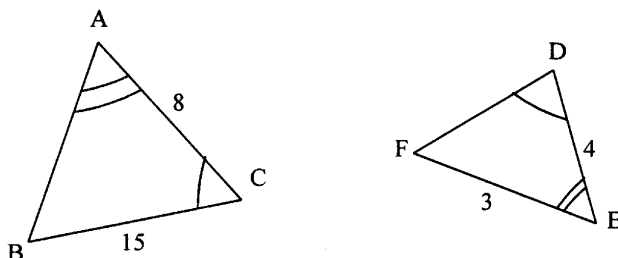
(c) y .

[3]

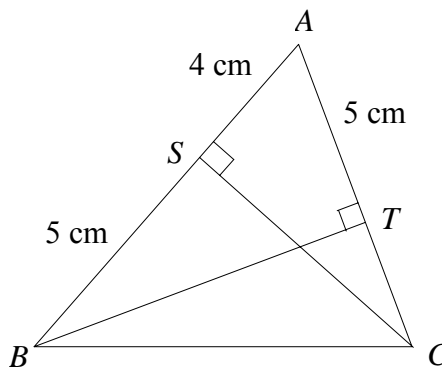


$$k = \underline{\hspace{2cm}}, x = \underline{\hspace{2cm}}, y = \underline{\hspace{2cm}}$$

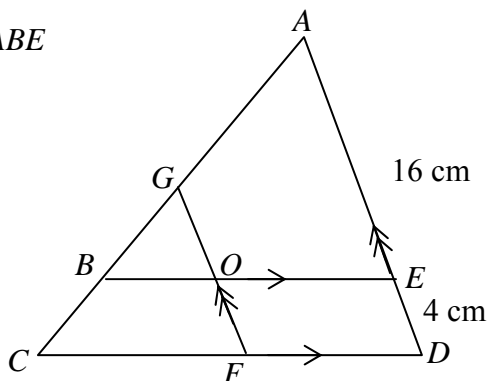
Q7 Are the two triangles below similar? Explain. [2]



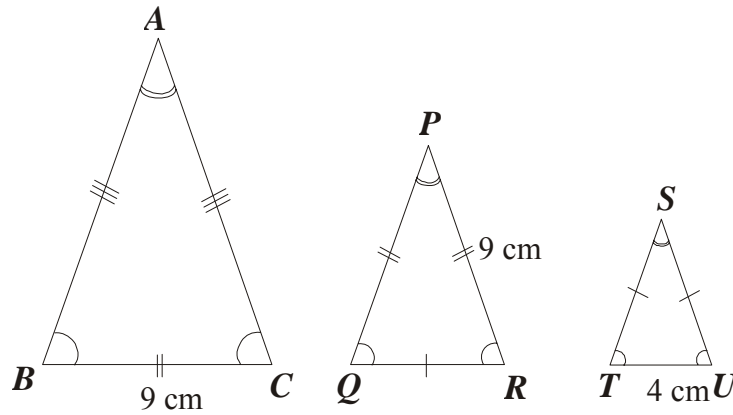
Q8 In the diagram, $\angle ASC = \angle ATB = 90^\circ$, $AS = 4$ cm, $AT = SB = 5$ cm.
 (a) Name a pair of similar triangles, [1]
 (b) Calculate the length of AC . [2]



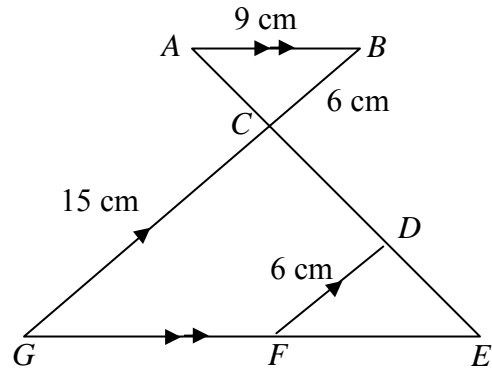
Q9 In the diagram, BE is parallel to CD and FG is parallel to DA . F is the mid-point of CD and $AD = 16$ cm, $ED = 4$ cm. If the area of $\triangle ACD$ is 48 cm², find
 (i) $\frac{BC}{AB}$ [1]
 (ii) the area of the triangle ABE [2]
 (iii) the ratio of $BC : GB$ [2]



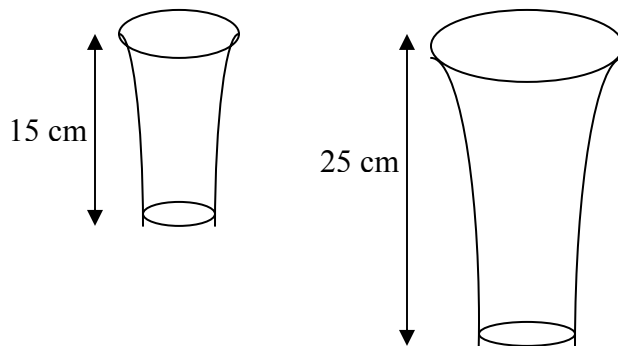
- Q10 Triangles ABC , PQR and STU below are similar, where $BC = PR = PQ = 9$ cm, $QR = SU = ST = x$ cm and $TU = 4$ cm. Find the length of QR and AC [3]



- Q11 In the diagram below, $GB \parallel FD$, $AB \parallel GE$, $AB = 9$ cm, $BC = FD = 6$ cm and $GC = 15$ cm.
- (a) Name two pairs of similar triangles. [2]
- (b) Find the ratio $ED : DC$. [1]
- Given further that the area of $\triangle FED = 10$ cm²,
- (c) find the area of quadrilateral $GFDC$. [2]



- Q12



The two containers shown above are geometrically similar, with heights 15 cm and 25 cm respectively.

- (i) The top of the smaller container has a circumference of 12 cm. Find the circumference of the top of the larger container. [1]
- (ii) Both containers are completely filled with wine. Given that the larger container holds 700 cm^3 of wine, find the volume of wine that the smaller container holds. [2]

Q13 Two similar cans of meat, A and B, have labels on them of areas 16 cm^2 and 36 cm^2 respectively.

- (i) If the smaller can contains 400 g of meat, find the amount, in grams, of meat the larger can will hold. [2]
- (ii) If another can which is geometrically similar holds 100g of meat, does it mean the height of this can is half that of can A? Support your answer with clear working. [2]