

**Solutions:**

Q1 Let  $A$  be the area of the house. [Remember to convert all measurements to the same units.]

$$\frac{A}{3250} = \left(\frac{150}{3}\right)^2$$

$$A = 8125000 \text{ cm}^2$$

Q2 
$$\frac{A_{CAE}}{9} = \left(\frac{8}{6}\right)^2$$

$$A_{CAE} = 16 \text{ cm}^2$$

Hence, area of  $ABDE$  is  $7 \text{ cm}^2$ .

Q3 (a) 
$$\frac{A_{PQR}}{24} = \left(\frac{10}{6}\right)^2$$

$$A_{PQR} = \frac{200}{3} \text{ cm}^2$$

(b) Area of  $SQRT = \frac{128}{3} \text{ cm}^2$

Q4 Let  $A$  be the surface area of the larger sphere

$$\frac{A}{64} = \left(\frac{3.5}{1}\right)^2$$

$$A = 784 \text{ cm}^2$$

Q5 (a) 
$$\frac{A_{smaller}}{A_{larger}} = \left(\frac{1}{2.5}\right)^2$$

$$\frac{A_{smaller}}{A_{larger}} = \frac{1}{6.25}$$

Hence, ratio of area of smaller prism to larger prism is 1:6.25.

(b) 
$$\frac{A_{smaller}}{625} = \frac{1}{6.25}$$

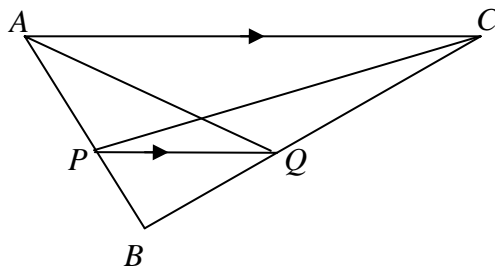
$$A_{smaller} = 100 \text{ cm}^2$$

Q6\* In the diagram,  $PQ$  is parallel to  $AC$ . Given that  $BQ = 4 \text{ cm}$ ,  $BC = 10 \text{ cm}$  and area of  $\triangle BPQ = 8 \text{ cm}^2$ , find

(a) the area of  $\triangle ABC$ ;

(b) the area of  $\triangle PQC$ ;

(c) the area of  $\triangle AQC$ .



$$(a) \quad \frac{A_{ABC}}{8} = \left(\frac{10}{4}\right)^2$$

$$A_{ABC} = 50 \text{ cm}^2$$

(b)

$\Delta PQB$  and  $\Delta PQC$  have a common height

$$\therefore \frac{1}{2} \times BQ \times h = \frac{1}{2} \times QC \times h$$

$$\frac{BQ}{QC} = \frac{4}{10-4} = \frac{2}{3}$$

$$\text{Since } \Delta PQB = 8 \text{ cm}^2, \Delta PQC = \frac{3}{2} \times 8 = 12 \text{ cm}^2$$

(c)

$\Delta ABC$  and  $\Delta AQC$  have a common height

$$\therefore \frac{1}{2} \times QC \times h = \frac{1}{2} \times BC \times h$$

$$\frac{QC}{BC} = \frac{6}{10} = \frac{3}{5}$$

$$\text{Since } \Delta ABC = 50 \text{ cm}^2, \Delta AQC = \frac{3}{5} \times 50 = 30 \text{ cm}^2$$