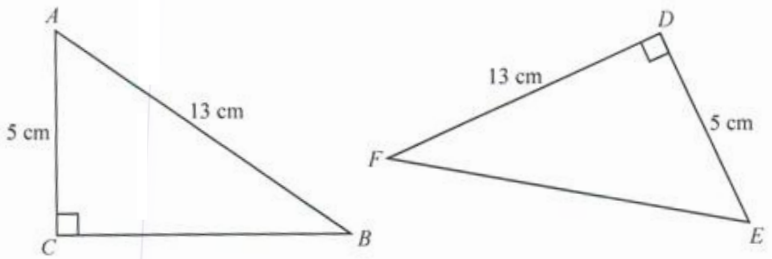
Class Test 2

30

Answer all questions. Show your working clearly.

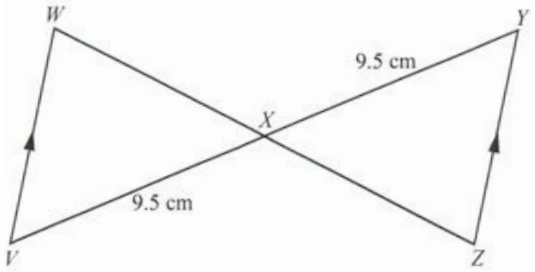
1. Are the following pairs of figures congruent? Explain your answers.

(a)



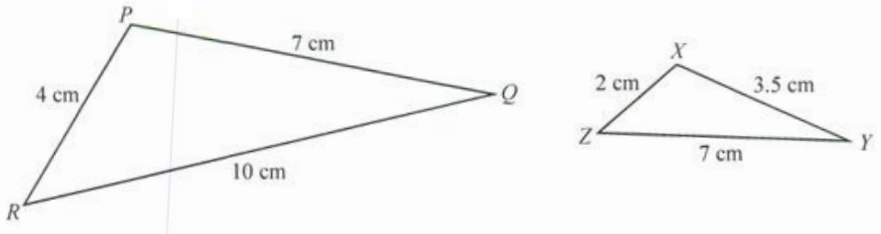
[2]

(b)



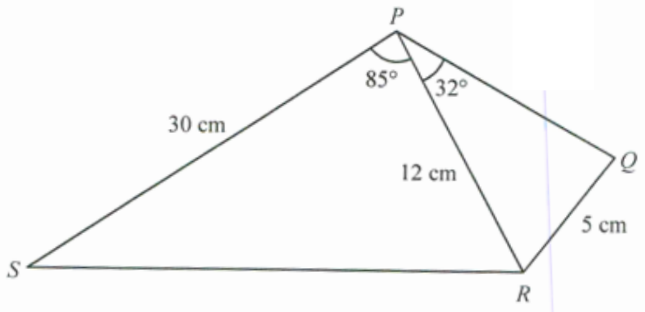
[2]

2.



Is $\triangle PQR$ similar to $\triangle XYZ$? Explain your answer. [2]

3.



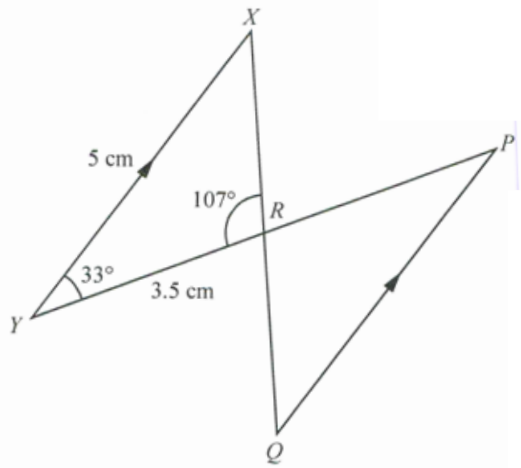
$\triangle PQR$ and $\triangle SPR$ are similar triangles. Find

(a) $\angle QRS$, [2]

(b) SR, [1]

(c) PQ. [1]

4.



$\triangle PQR$ and $\triangle YXR$ are congruent triangles. Find

(a) PY, [1]

(b) PQ, [1]

(c) $\angle PQR$. [1]

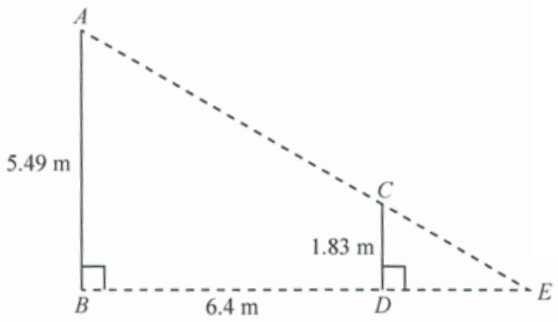
5. A quadrilateral has four sides measuring 12 cm, x cm, 15 cm and 8 cm. A similar quadrilateral has corresponding sides measuring 3 cm, 3.5 cm, y cm and 2 cm.
   (a) Find the value of x and of y. [2]
   (b) The longest side of another similar quadrilateral is 22.5 cm. Find the perimeter of the quadrilateral. [3]

6. On a map, the distance between P and Q is 7.5 cm.

   (a) R is due east of P and $\angle PQR = 42°$. If the actual distance between Q and R is 35.7 km, find the scale of the map in the form $1 : n$. [2]
   (b) S is due south of R and $RS = 28$ km. Mark out point S. [2]
   (c) Find the actual distance between P and S. [2]

7. A map is drawn with the scale of 1 : 60 000.
   (a) The distance between towns A and B is 7.68 km. Find the distance between the two towns represented on the map. [1]
   (b) On the map, the distance between a gas station and a school is 7.5 cm. What is the actual distance? [1]
   (c) A forested area on the map has an area of 10.5 cm^2. Find the actual area, in km^2. [1]

8. The diagram below shows a man, CD, standing a distance away from a lamp post, AB. The lamp post is 5.49 m tall and the man is 1.83 m tall. The man stands 6.4 m away from the lamp post.



$\triangle CDE$ and $\triangle ABE$ are similar triangles.
   (a) Find the length of the man's shadow, DE. [2]
   (b) If AE = 11.1 m, find CE. [1]