NAME

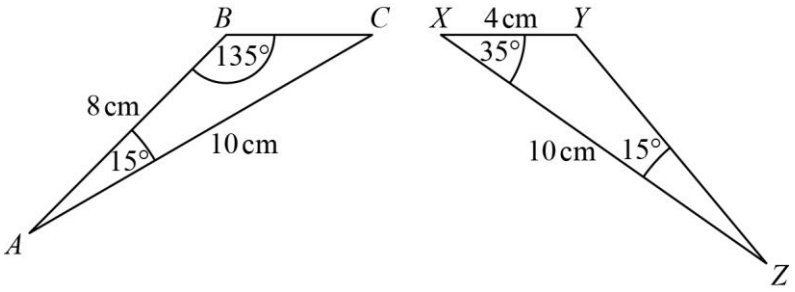
Time:

Non-Calculator Questions

7th

1 *ABC* and *XYZ* are triangles.

Show that the triangles are **not** similar.



(2 marks)

7th

3 A small photograph has a width of 4 cm and a length of 6 cm.

Dean enlarges the small photograph.

The enlarged photograph has a length of 21 cm.

Work out the width of the enlarged photograph.

(2 marks)

5 In the diagram, *ST* is parallel to *PQ*.

PQ = *a* cm and *ST* = 8 cm

ST = 8 cm

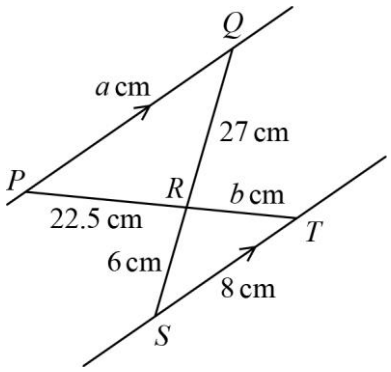
QR = 27 cm

RS = 6 cm

PR = 22.5 cm

PQ = *a* cm

RT = *b* cm



9th

a Explain why the triangles *PQR* and *TSR* are similar.

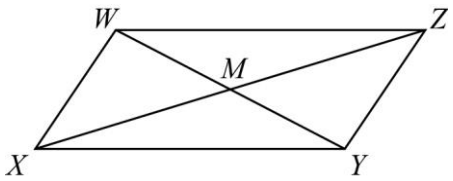
(2 marks)

8th

b Work out the value of *a* and the value of *b*.

(2 marks)

7 *WXYZ* is a parallelogram.



M is the point where the diagonals *WY* and *XZ* meet.

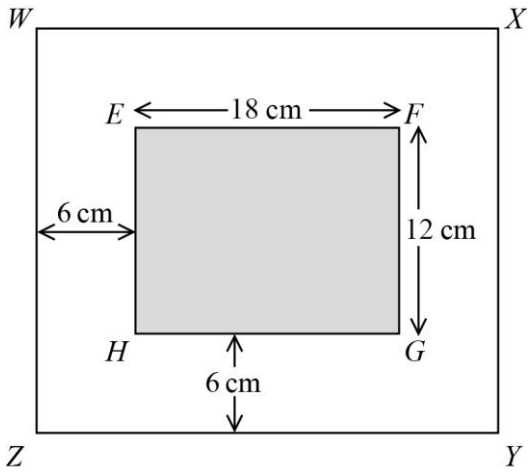
Prove that triangle *MWX* is congruent to triangle *MZY*.

(3 marks)

NAME

Calculator Questions (30 minutes)

9 *EFGH* and *WXYZ* are two rectangles.



Rectangle *EFGH* is 18 cm by 12 cm.

There is a space 6 cm wide between rectangle *EFGH* and rectangle *WXYZ*.

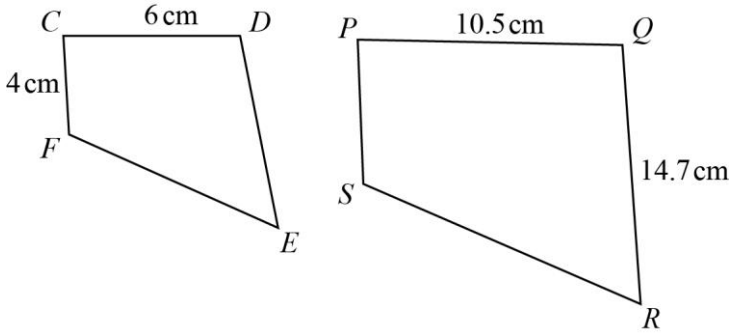
Are rectangle *EFGH* and rectangle *WXYZ* mathematically similar?

You must show how you get your answer.

(3 marks)

7th

11 Quadrilaterals *CDEF* and *PQRS* are mathematically similar.



a Work out the length of *PS*.

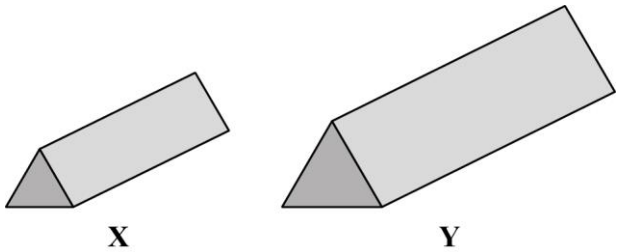
(2 marks)

b Work out the length of *DE*.

(2 marks)

12th

13 **X** and **Y** are mathematically similar shapes.

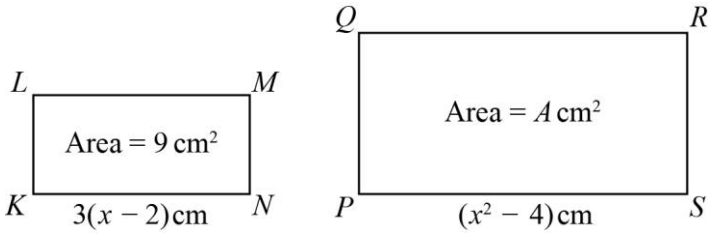


Shape **X** has a volume of 130 cm^3 and a surface area of 202 cm^2.

The volume of shape **Y** is 638.69 cm^3.Calculate the surface area of shape **Y**.

(4 marks)

15 Rectangles *KLMN* and *PQRS* are mathematically similar.



The length of rectangle *KLMN* is $3(x - 2)$ cm.

The length of rectangle *PQRS* is $(x^2 - 4)$ cm.

The area of rectangle *KLMN* is $9\,\text{cm}^2$.

The area of rectangle *PQRS* is $A\,\text{cm}^2$.

Prove that $A = x^2 + 4x + 4$

(4 marks)

Overall mark	**/50**