

Similar Shapes

N5 Maths Exam Questions

Source: 2018 P2 Q18 N5 Maths

(1) A cinema sells popcorn in two different sized cartons.



The small carton is 16 centimetres deep and has a volume of 576 cubic centimetres.

The large carton is 24 centimetres deep and has a volume of 1125 cubic centimetres.

(a) Show that the two cartons are **not** mathematically similar.

The large carton is redesigned so that the two cartons are **now** mathematically similar.

The volume of the redesigned large carton is 1500 cubic centimetres.

(b) Calculate the depth of the redesigned large carton.

Answer: (a) $1944 \neq 1125$ so the cartons are not mathematically similar

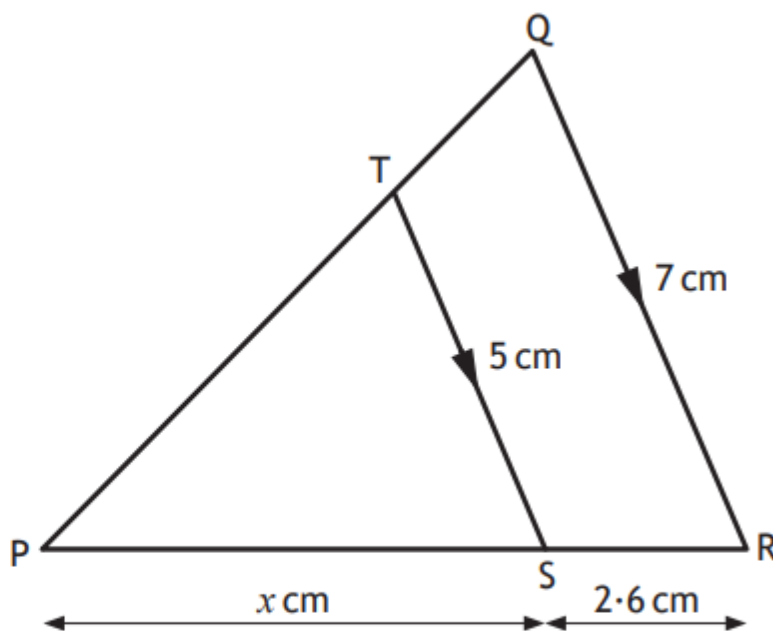
(b) 22(.0) cm

Source: 2017 P1 Q15 N5 Maths

(2)

In the diagram below:

- TS is parallel to QR
- $TS = 5$ centimetres
- $QR = 7$ centimetres
- $SR = 2.6$ centimetres



The length of PS is x centimetres.

Calculate the value of x .

Answer: $x = 6.5\text{ cm}$

Source: 2016 P2 Q11 N5 Maths

(3)

Two pictures are mathematically similar in shape.



The cost of each picture is proportional to its area.

The large picture costs $\pounds 13.75$.

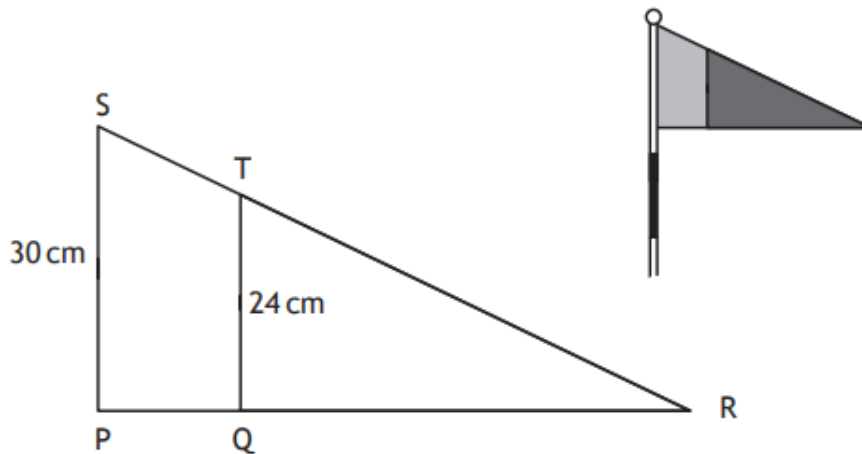
Find the cost of the small picture.

Answer: $\text{Cost} = \pounds 4.95$

Source: 2015 P2 Q9 N5 Maths

(4)

The flag at each hole on a golf course is coloured red and blue.
The diagram below represents a flag.
Triangle QRT represents the red section.
PQTS represents the blue section.



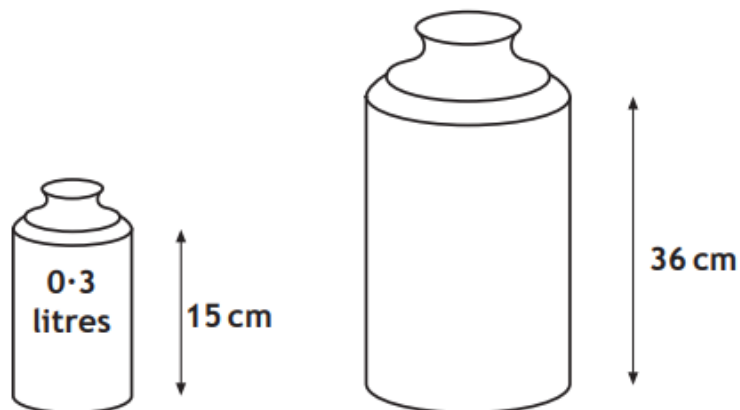
Triangles PRS and QRT are mathematically similar.
The area of triangle QRT is 400 square centimetres.
Calculate the area of PQTS, the blue section of the flag.

Answer: $Area\ of\ PQTS = 225\ cm^2$

Source: Specimen P2 Q9 N5 Maths

(5)

Screenwash is available in two different sized bottles, 'Mini' and 'Maxi'.
The bottles are mathematically similar.



Calculate the volume of the 'Maxi' bottle.

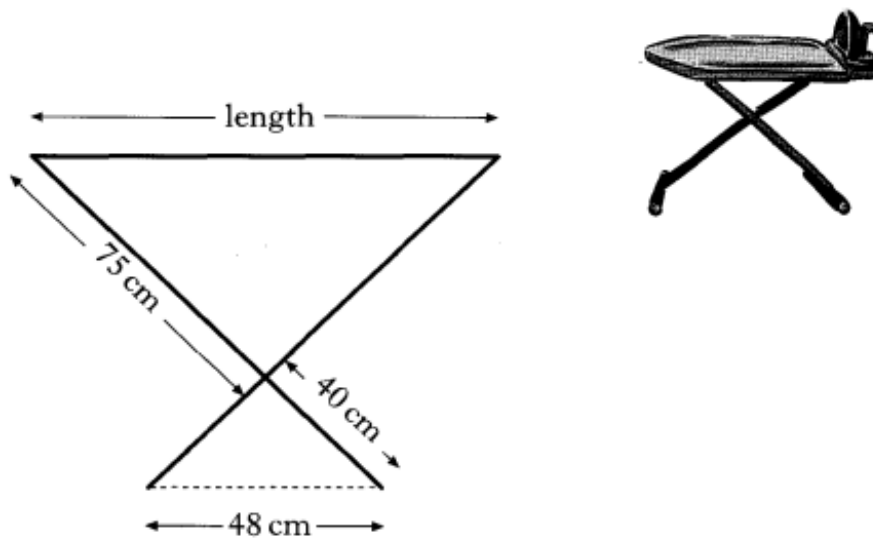
Answer: $Volume = 4.1472\ litres$

Source: 2007 P1 Q8 Credit Maths

(6)

Mick needs an ironing board.

He sees one in a catalogue with measurements as shown in the diagram below.



When the ironing board is set up, two similar triangles are formed.

Mick wants an ironing board which is at least 80 centimetres in length.

Does this ironing board meet Mick's requirements?

Show all your working.

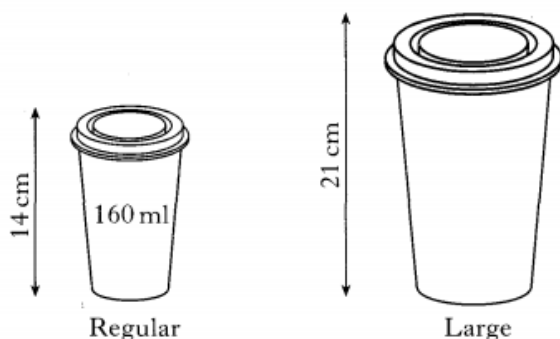
Answer: *Yes since $90\text{ cm} > 80\text{ cm}$*

Source: 2006 P1 Q7 Credit Maths

(7)

Coffee is sold in regular cups and large cups.

The two cups are mathematically similar in shape.



The regular cup is 14 centimetres high and holds 160 millilitres.

The large cup is 21 centimetres high.

Calculate how many millilitres the large cup holds.

Answer: *540 ml*