G55... (H) Similar Shapes
Area

OCR

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G55
G56

(b) Prism P and prism Q are similar.
The ratio of the surface area of prism P to the surface area of prism Q is 1 : 3.

(i) Jay says

The height of prism P is one third of the height of prism Q.

Explain why he is wrong.

.....

..... **[1]**

(ii) The volume of prism Q is 86 cm^3.

Calculate the volume of prism P.

(b)(ii) ..... cm^3 **[3]**

Video created by W Neill

GSS
GS6

(b) Prism P and prism Q are similar.
The ratio of the surface area of prism P to the surface area of prism Q is 1 : 3.

A

(i) Jay says

L

The height of prism P is one third of the height of prism Q.

Explain why he is wrong.

x3 is an area scale factor L

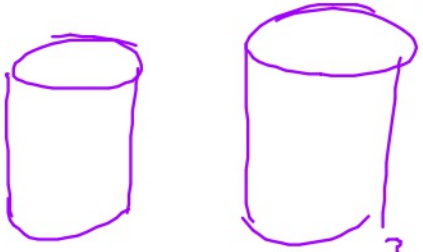
you need to √ it to get length sf √ ..... [1]

A x3

Sf = √3

(ii) The volume of prism Q is 86 cm^3.

Calculate the volume of prism P.



V

L = √3

A = 3

V = 3√3 L

x3√3

86 / 3√3

16.55

(b)(ii) ..... cm^3 **[3]** ✓

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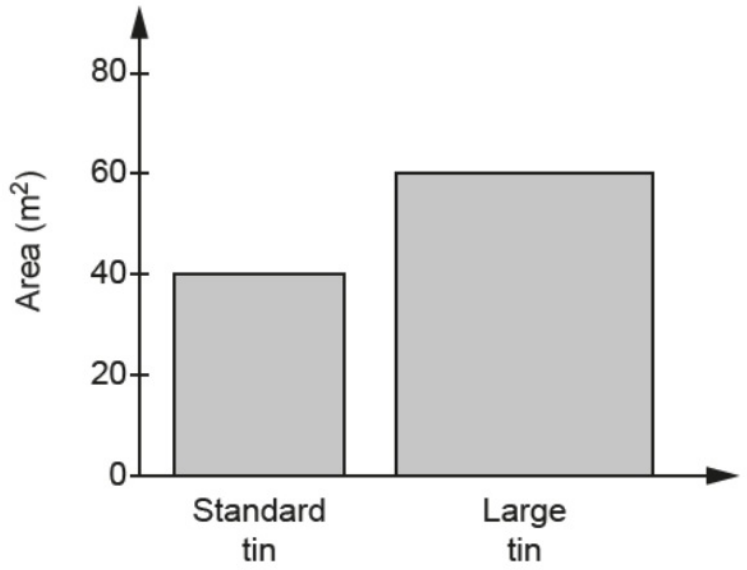
18 Percy sells paint in standard tins and large tins.
The standard tin covers $40\,m^2$ and the large tin covers $60\,m^2$.

(a) Percy publishes this chart showing the area that can be covered with each tin of paint.

G5S/S6



Explain why the chart is misleading.

.....

..... **[1]**

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(b) The standard tin and the large tin are mathematically similar.
The **volume** of the large tin is 50% more than the volume of the standard tin.
Both tins are cylinders.
The radius of the standard tin is 10 cm.

G55
G56

Calculate the radius of the large tin.

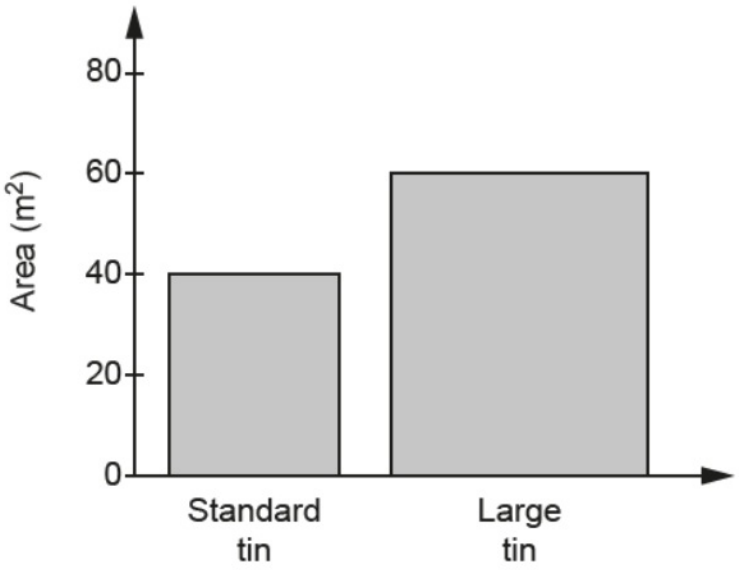
(b) ..... cm **[4]**

Created by W Neill

18 Percy sells paint in standard tins and large tins.
The standard tin covers 40 m^2 and the large tin covers 60 m^2.

(a) Percy publishes this chart showing the area that can be covered with each tin of paint.

G5S/S6



Explain why the chart is misleading.

width of bars need to be equal

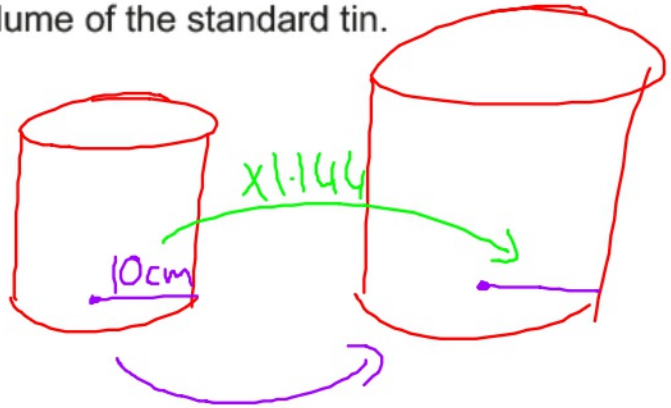
..... **[1]**

Created by W Neill

(b) The standard tin and the large tin are mathematically similar.

GSS
GS6 The **volume** of the large tin is 50% more than the volume of the standard tin.
Both tins are cylinders.
The radius of the standard tin is 10 cm.

Calculate the radius of the large tin.



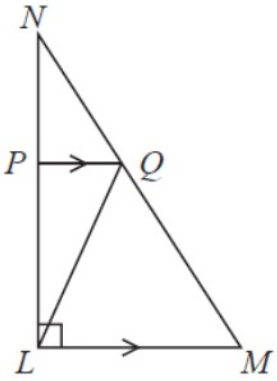
L = x1.144
A =
V = x1.5
3

(b) 11.447 cm **[4]**

EDEXCEL

18 LMN is a right-angled triangle.

Video created by W Neill



Angle $NLM = 90°$
PQ is parallel to LM.

The area of triangle PNQ is 8 cm^2
The area of triangle LPQ is 16 cm^2

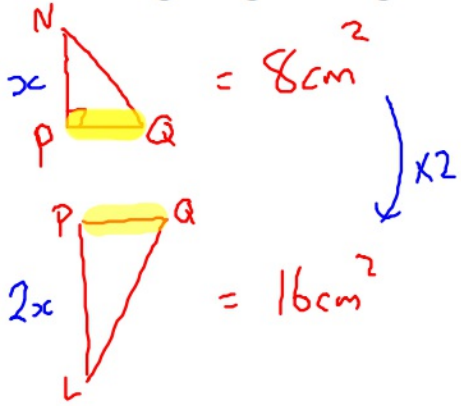
Work out the area of triangle LQM.

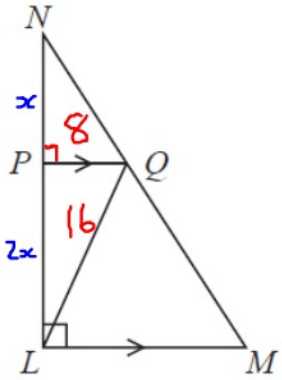
..... cm^2

(Total for Question 18 is 4 marks)

18 LMN is a right-angled triangle.

Video created by W Neill

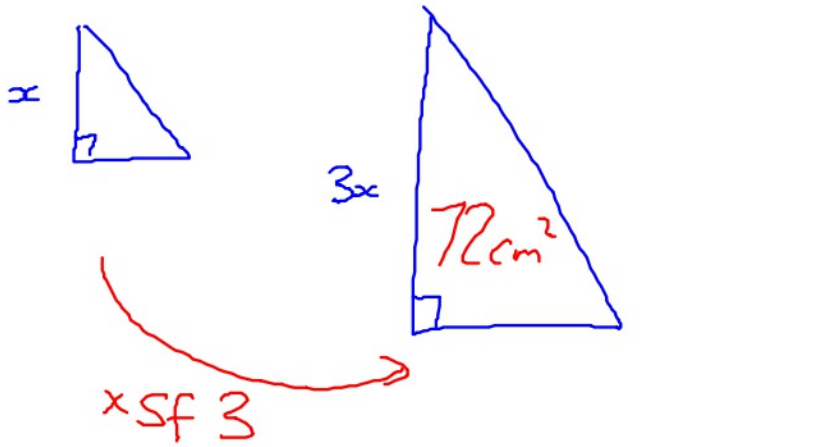


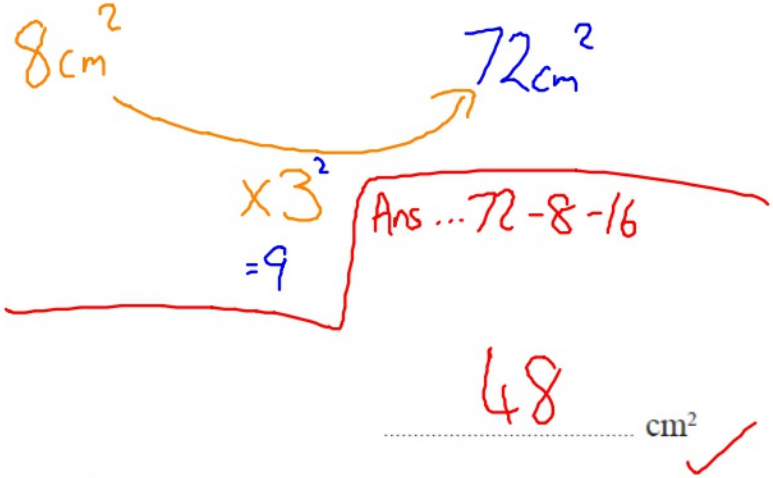


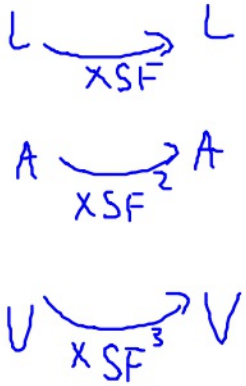
Angle $NLM = 90°$
PQ is parallel to LM.

The area of triangle PNQ is 8 cm²
The area of triangle LPQ is 16 cm²

Work out the area of triangle LQM.







(Total for Question 18 is 4 marks)

AQA