

G55... (H) Similar Shapes Area

OCR

- (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.

G55
G56

- (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]

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- (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.

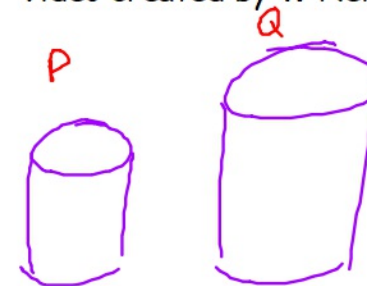
G55
G56

- (i) Jay says

A

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

L



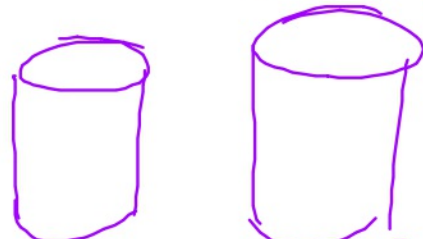
Explain why he is wrong.

x3 is an area scale factor
you need to $\sqrt{\quad}$ it to get length sf $\sqrt{\quad}$ [1]

SF
 $\sqrt{3}$
A $\times 3$

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

Calculate the volume of prism P.



86cm^3

$\times 3\sqrt{3}$

V
 $L = \sqrt{3}$
 $A = 3$
 $V = 3\sqrt{3}L$

$$\frac{86}{3\sqrt{3}}$$

16.55cm^3 [3] ✓

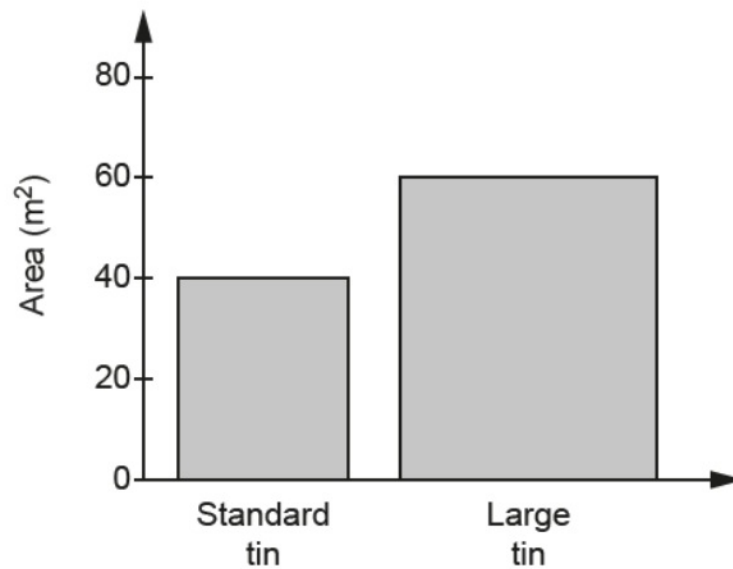
(b)(ii) cm^3 [3] ✓

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 .

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

G55/56



Explain why the chart is misleading.

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

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- (b) The standard tin and the large tin are mathematically similar.
G55 The **volume** of the large tin is 50% more than the volume of the standard tin.
G56 Both tins are cylinders.
G56 The radius of the standard tin is 10 cm.

Calculate the radius of the large tin.

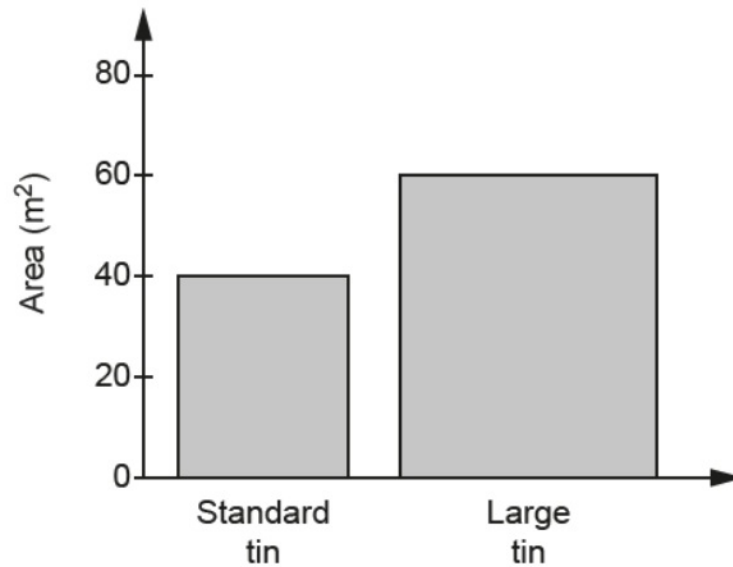
(b) cm [4]

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 .

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

G55/56



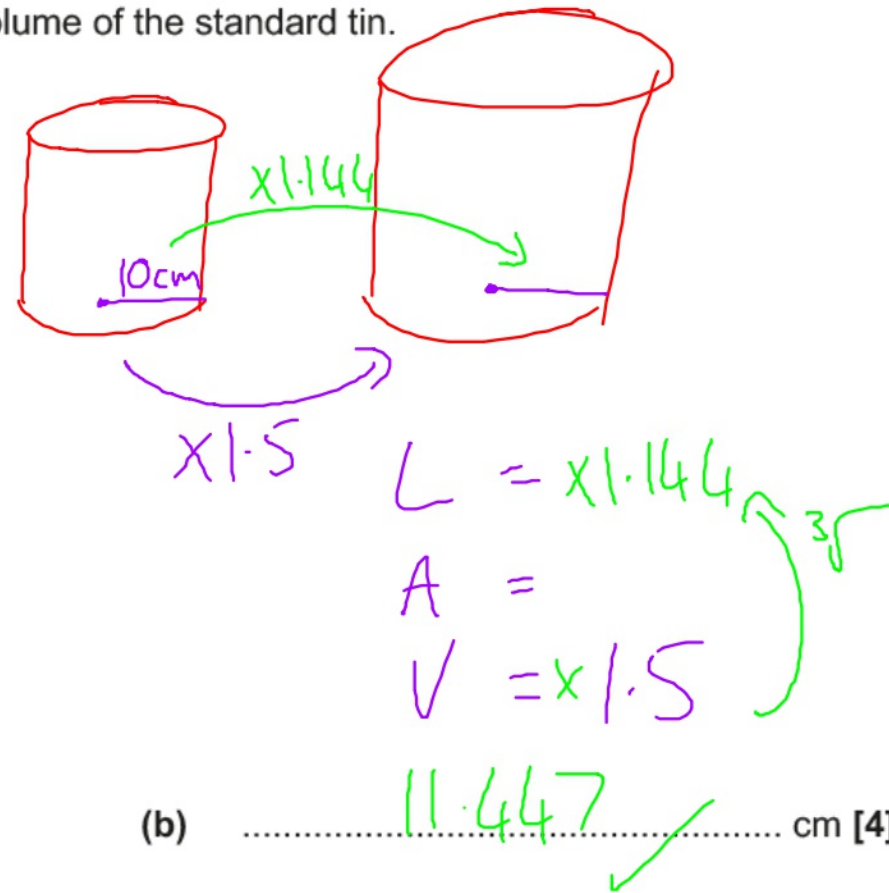
Explain why the chart is misleading.

width of bars need to be equal

[1]

- (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.
G55 Both tins are cylinders.
G56 The radius of the standard tin is 10 cm.

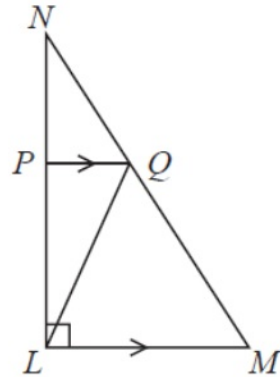
Calculate the radius of the large tin.



EDEXCEL

18 LMN is a right-angled triangle.

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Angle $NLM = 90^\circ$

PQ is parallel to LM .

The area of triangle PNQ is 8 cm^2

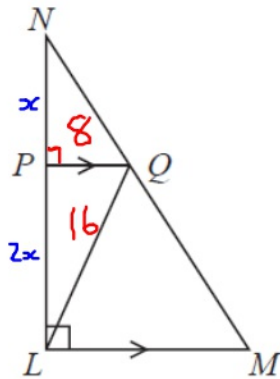
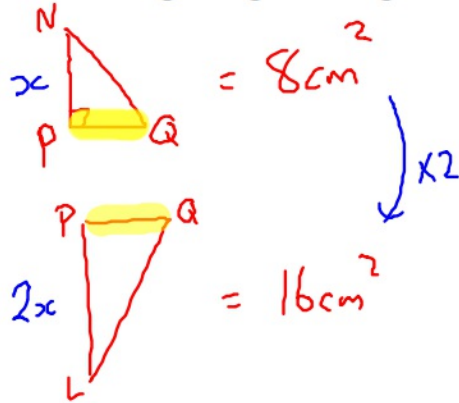
The area of triangle LPQ is 16 cm^2

Work out the area of triangle LQM .

..... cm^2

(Total for Question 18 is 4 marks)

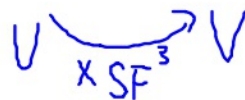
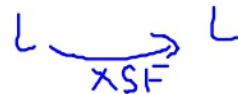
18 LMN is a right-angled triangle.



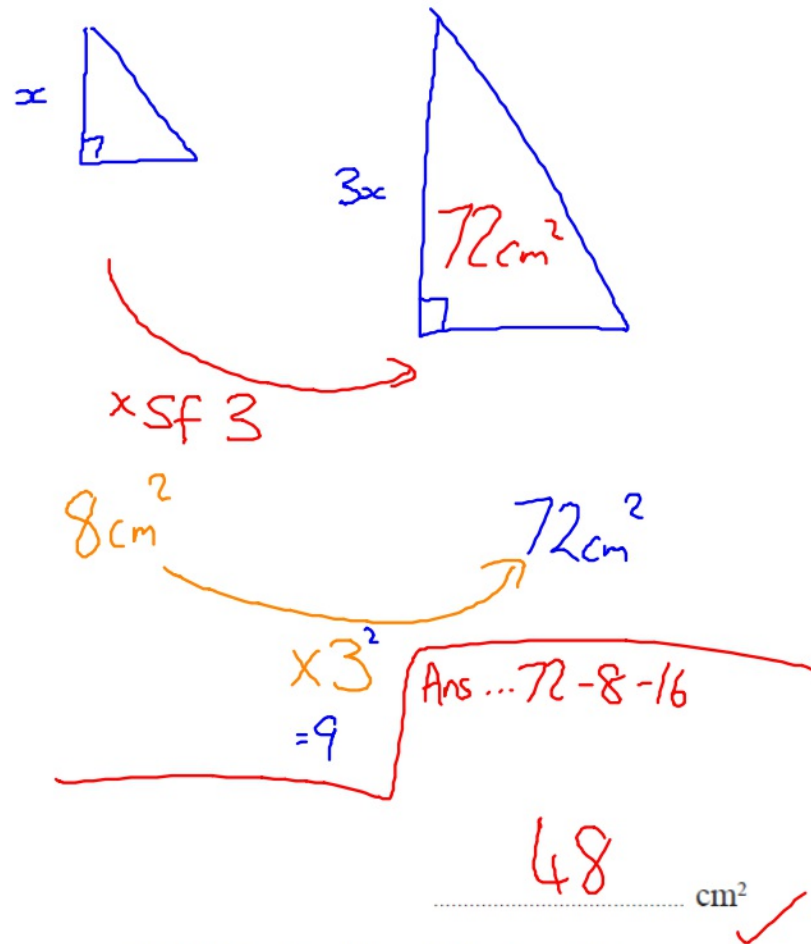
Angle $NLM = 90^\circ$
 PQ is parallel to LM .

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 .



Video created by W Neill



(Total for Question 18 is 4 marks)

AQA