New Maths GCSE: G19 - Length, Area and Volume Scale Factors

Name:... Date:..

The above two shapes are similar. What is the value of x?

A) 18 cm   B) 12 cm

C) 14 cm   D) 24 cm

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

These two shapes are similar:

Length: 3cm
Surface Area: $10cm^2$
Shape A

Length: 9cm
Surface Area: ???
Shape B

What is the surface area of Shape B?

A $100cm^2$ B $16cm^2$

C $90cm^2$ D $30cm^2$

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

A
10 cm

B
50 cm

These two shapes are similar.
What is the Area Scale Factor to get from A to B?

A 40   B 10

C 5   D 25

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

Length Scale Factor	x ⭐
Area Scale Factor	x 9
Volume Scale Factor	

What should replace the star?

A 81

B 4.5

C 3

D 9

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

Length Scale Factor	x 3
Area Scale Factor	
Volume Scale Factor	x ⭐

What should replace the star?

A 27

B 3

C 9

D 300

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

Shape B is an enlargement s.f. 2 of shape A

A

4cm

B

8cm

The area of shape A is 15cm^2
What is the area of shape B?

a) 32cm^2 b) 120 cm^2
c) 30cm^2 d) 60cm^2

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....
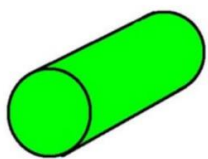

These two shapes are similar:

Length: 3cm
Volume: $8cm^3$
Shape A

Length: 9cm
Volume: ???
Shape B

What is the volume of Shape B?

A $72cm^3$

B $216cm^3$

C $512cm^3$

D $24cm^3$

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

These two shapes are similar:

Length: 3cm
Surface Area: ???
Shape A

Length: 6cm
Surface Area: $40cm^2$
Shape B

What is the surface area of Shape A?

A	$10cm^2$	B	$160cm^2$
C	$\sqrt{40}cm^2$	D	$20cm^2$

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

A   B

2 cm   8 cm

These two shapes are similar.
What is the Volume Scale Factor to get from B to A?

A	-4	B	4
C	$\frac{1}{64}$	D	$\frac{1}{4}$

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

Length Scale Factor	$\times \frac{1}{4}$
Area Scale Factor	
Volume Scale Factor	$\times$ ⭐

What should replace the star?

A	$\frac{1}{4}$	B	$\frac{1}{12}$
C	$\frac{1}{16}$	D	$\frac{1}{64}$

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

Length Scale Factor	
Area Scale Factor	$\times$ ⭐
Volume Scale Factor	$\times 729$

What should replace the star?

A	9	B	18
C	81	D	729

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....

These two shapes are similar:

Surface Area: $6cm^2$

Volume: $30cm^3$

Shape A

Surface Area: $24cm^2$

Volume: $???$

Shape B

What is the volume of Shape B?

A	$60cm^3$	**B**	$240cm^3$
C	$180cm^3$	**D**	$120cm^3$

Correct Answer: A B C D

Explanation:

....

....

....

....

....

....