



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:

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These two shapes are similar:

Length: 3cm Length: 9cm
Surface Area: 10cm² Surface Area: ???

Shape A Shape B

What is the surface area of Shape B?

A) 100cm² B) 16cm²
C) 90cm² D) 30cm²

Correct Answer: A B C D

Explanation:

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10 cm 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:

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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:

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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:

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



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

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

Correct Answer: A B C D

Explanation:

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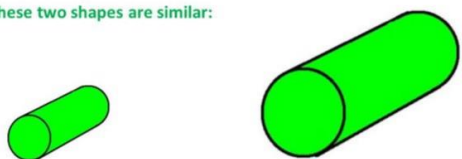
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These two shapes are similar:



Length: 3cm Length: 9cm
 Volume: 8cm^3 Volume: ???
 Shape A 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:

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These two shapes are similar:



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



Length: 6cm
Surface Area: 40cm²
Shape B

What is the surface area of Shape A?

A 10cm²

C $\sqrt{40}cm^2$

B 160cm²

D 20cm²

Correct Answer: A B C D

Explanation:

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A



2 cm

B



8 cm

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

A -4

C $\frac{1}{64}$

B 4

D $\frac{1}{4}$

Correct Answer: A B C D

Explanation:

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

What should replace the star?

A $\frac{1}{4}$

C $\frac{1}{16}$

B $\frac{1}{12}$

D $\frac{1}{64}$

Correct Answer: A B C D

Explanation:

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

What should replace the star?

A 9

C 81

B 18

D 729

Correct Answer: A B C D

Explanation:

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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?

<input type="radio"/> A	60cm^3	<input type="radio"/> B	240cm^3
<input type="radio"/> C	180cm^3	<input type="radio"/> D	120cm^3

Correct Answer: A B C D

Explanation:

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