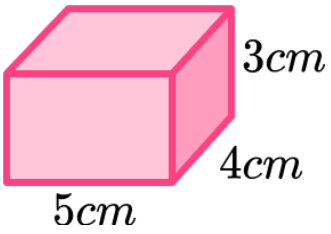
How to Calculate Surface Area - Worksheet

Skill

Group A - Surface area of a cuboid/prism

Find the surface area of each shape:

1)



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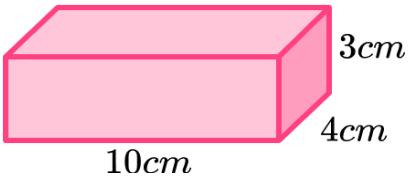
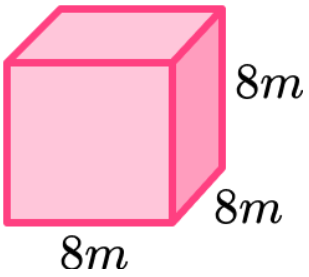


3)



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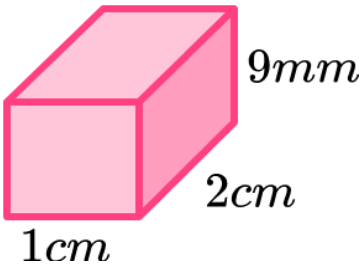

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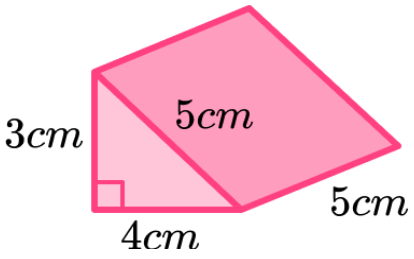

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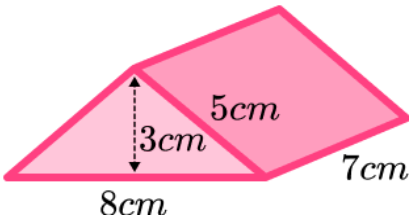
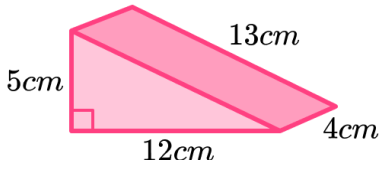
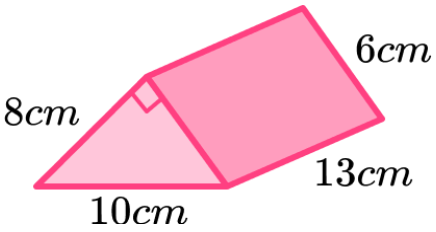


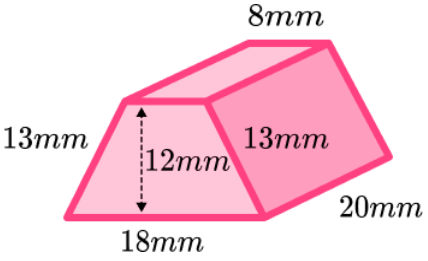
7)



8)



9)



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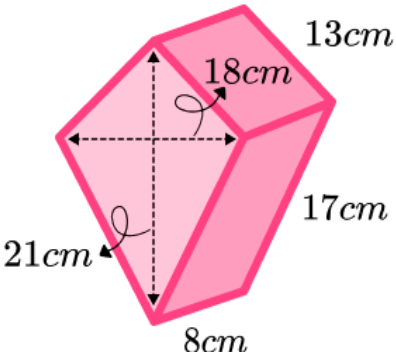

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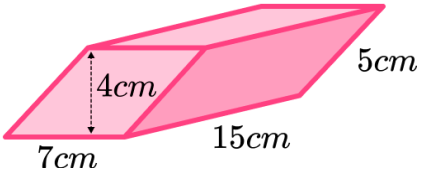
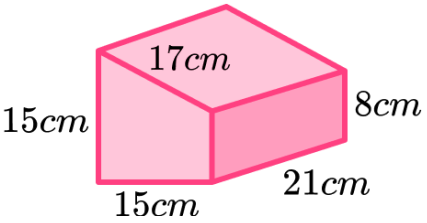


12)

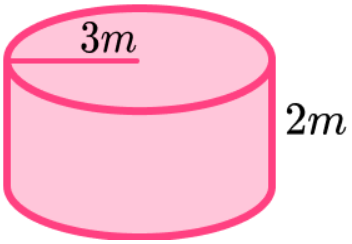


How to Calculate Surface Area - Worksheet

Group B - Surface area of a cylinder/cone/sphere

Find the surface area of each shape. Give your answers to 1 d.p.

1)



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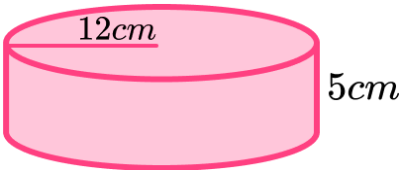
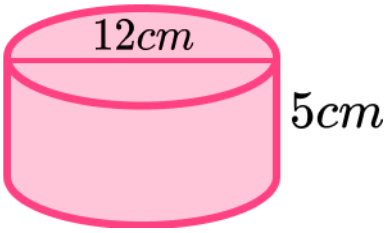


3)



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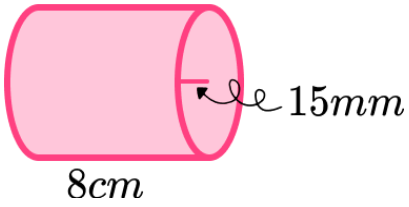

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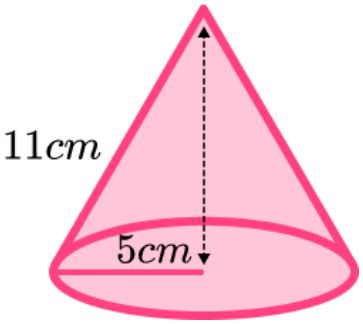
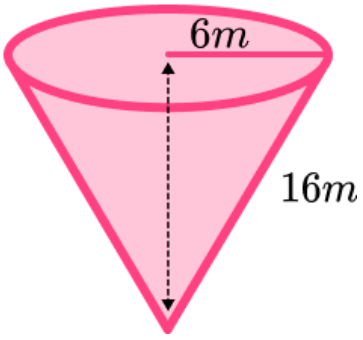
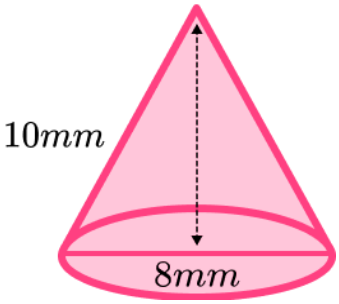


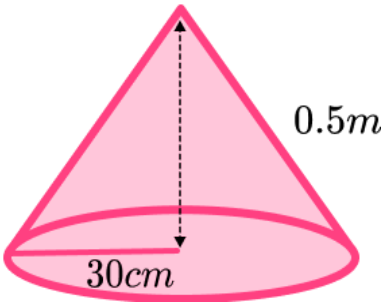
6)



7)



8)



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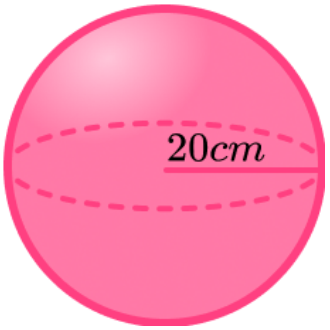

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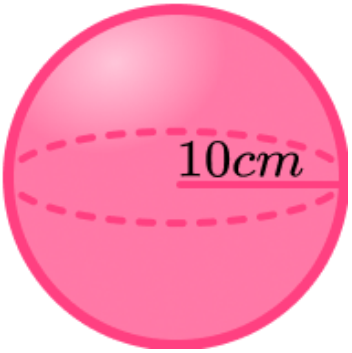
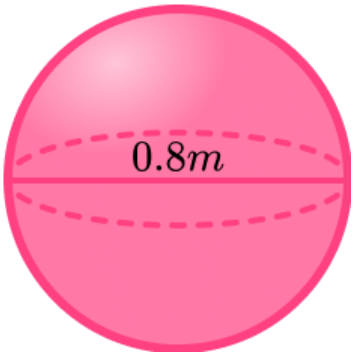
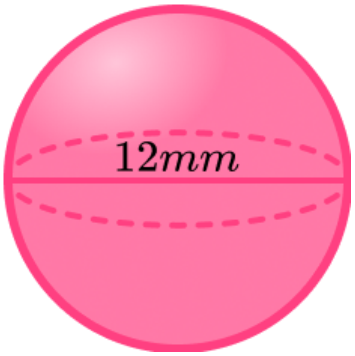


11)



12)

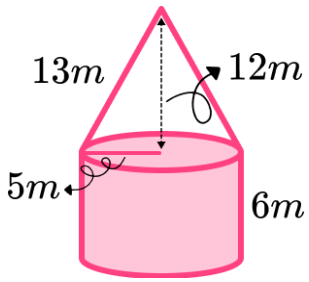


How to Calculate Surface Area - Worksheet

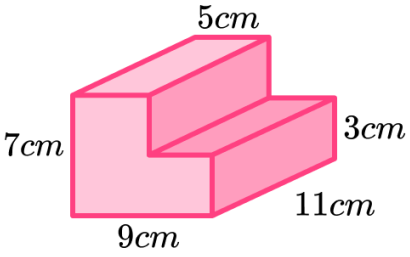
Group C - Surface area of a composite solid

Find the surface area of each shape. Give your answers to 1 d.p.

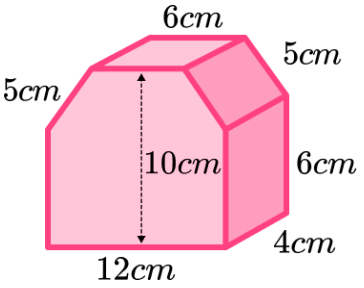
1)



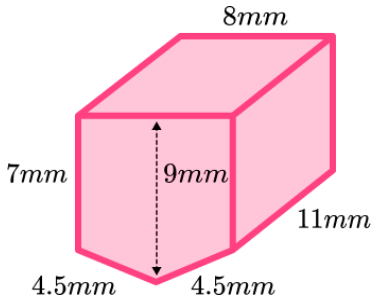
2)



3)

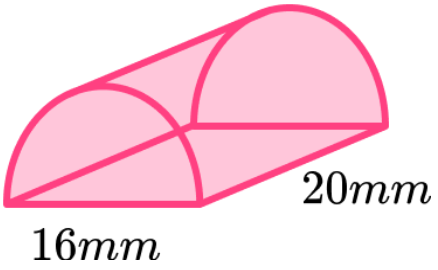


4)

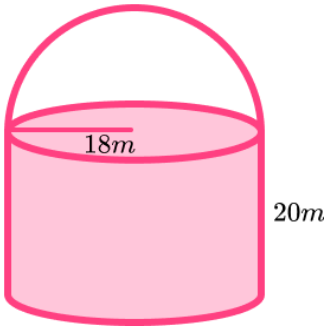


5)

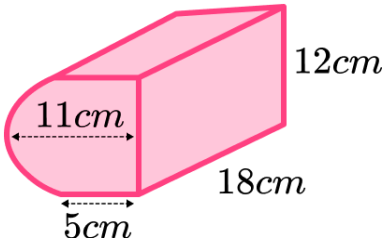
6)



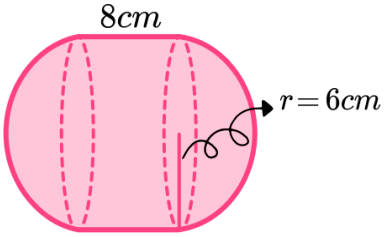
7)



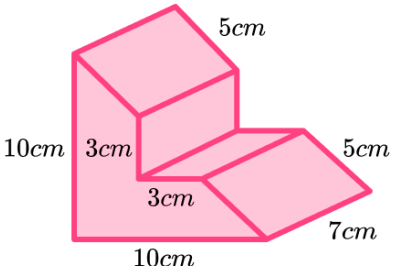
8)



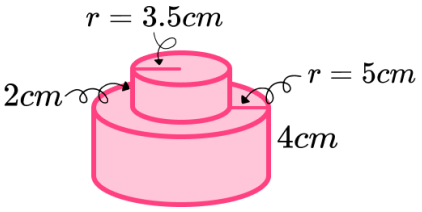
9)



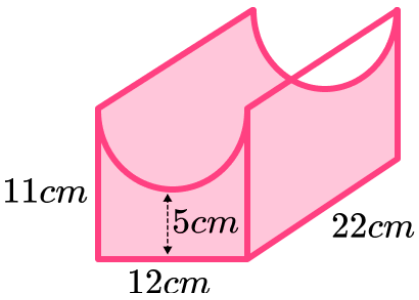
10)



11)



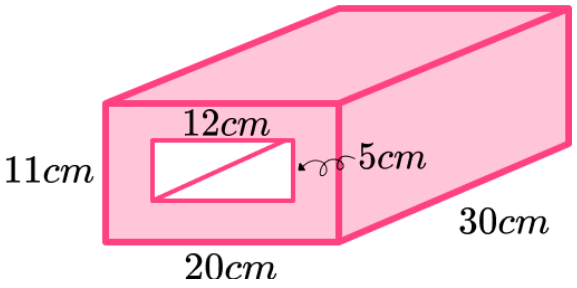
12)



How to Calculate Surface Area - Worksheet

Applied

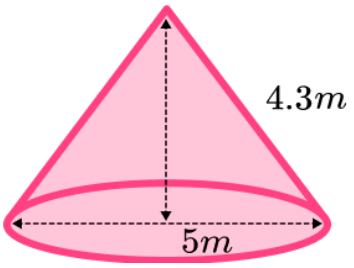
1) Calculate the surface area of this shape



2) **(a)** One biscuit has a diameter of $6cm$ and a height of $8mm$. Work out the height of 20 biscuits. Give your answer in cm.

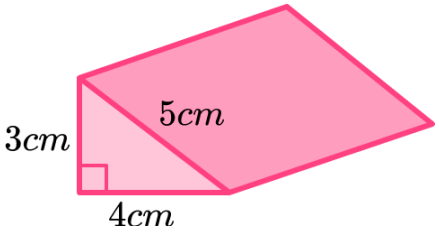
(b) 20 biscuits are stacked and packaged in a plastic wrapper. Calculate the surface area of the wrapper.

3) Dave owns a glamping site. He has 12 canvas tents, each in the shape below.



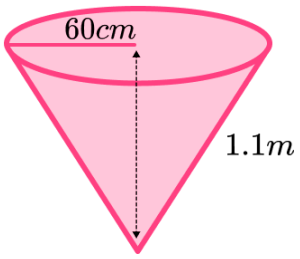
Dave needs to buy soap to clean the curved surface area of the tents. 1 litre of soap will clean $20m^2$ of canvas. How many litres of soap does Dave need?

4) The surface area of this shape is $108cm^2$. Work out the length of the shape.



How to Calculate Surface Area - Exam Questions

1) Calculate the surface area of the cone.
Give your answer in m^2 to 1 d.p.



.....

(3 marks)

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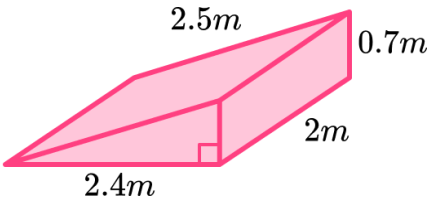
2) **(a)** Jonny has designed a bike ramp as shown.



Jonny intends to construct the bike ramp from sheets of wood. Calculate the surface area of wood Jonny requires to build the ramp.

.....

(3)

(b) The wood costs £18. 20 per square metre. How much will it cost Jonny to build the ramp?

.....

(1)

(4 marks)

How to Calculate Surface Area - Exam Questions

3) A new planet has been discovered. The radius of the planet is $6256km$.
Work out the surface area of the planet. Give your answer to 3sf.

.....

(3 marks)

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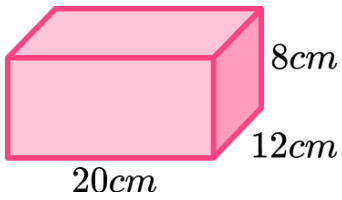
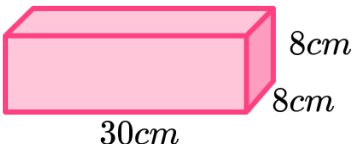
4) **(a)** This box has a volume of $1920cm^3$. Work out the surface area of the box.



.....

(2)

(b) This box also has a volume of $1920cm^2$. Is the surface area of this box the same as the box above? Show how you decide.

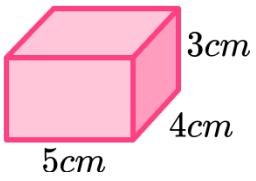
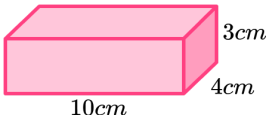
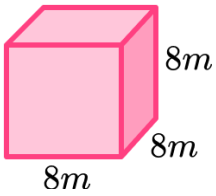
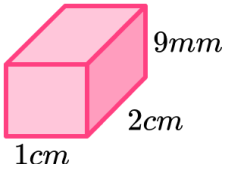
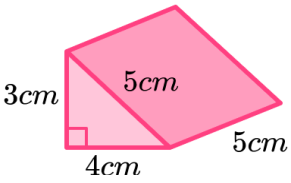
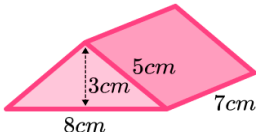
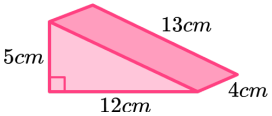
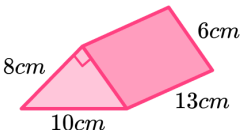


.....

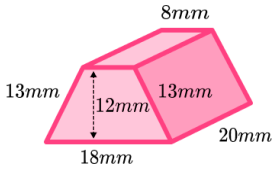
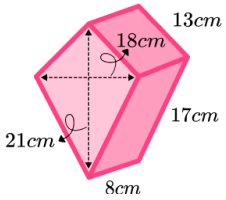
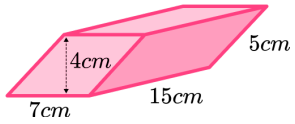
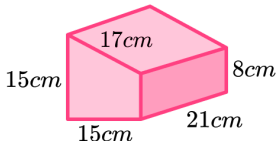
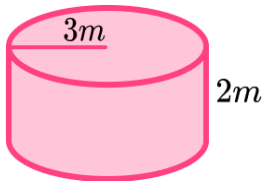
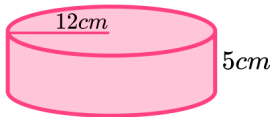
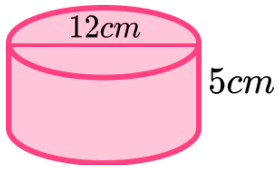
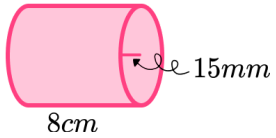
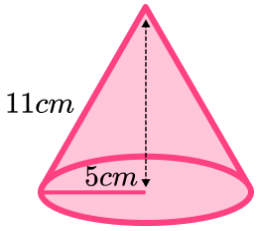
(2)

(4 marks)

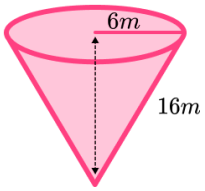
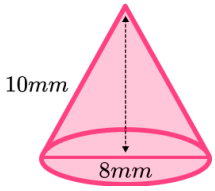
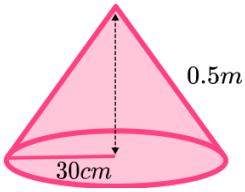
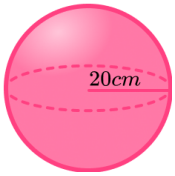
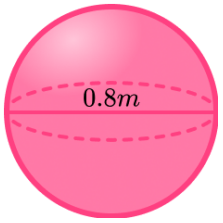
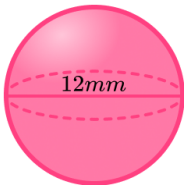
How to Calculate Surface Area - Answers

	Question	Answer
	Skill Questions	
Group A	Find the surface area of each shape:	
	1) 	**1)** $94cm^2$
	2) 	**2)** $164cm^2$
	3) 	**3)** $384m^2$
	4) 	**4)** $9.4cm^2 / 940mm^2$
	5) 	**5)** $72cm^2$
	6) 	**6)** $150cm^2$
	7) 	**7)** $180cm^2$
	8) 	**8)** $360cm^2$

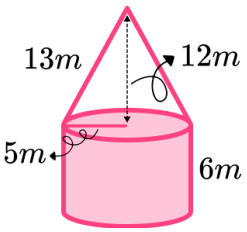
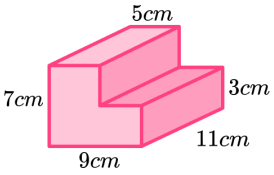
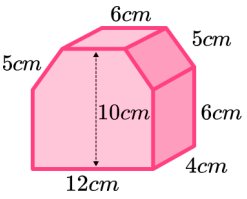
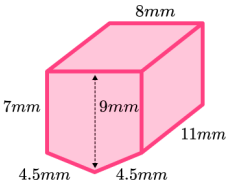
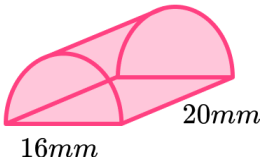
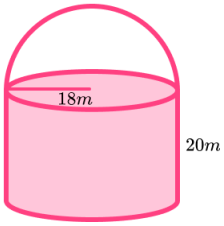
How to Calculate Surface Area - Answers

Group A contd	**9)** 	**9)** $1352mm^2$
	10) 	**10)** $858cm^2$
	11) 	**11)** $416cm^2$
	12) 	**12)** $1500cm^2$
Group B	Find the surface area of each shape. Give your answers to 1 d.p. **1)**  **2)**  **3)**  **4)**  **5)** 	**1)** $94.2cm^2$ **2)** $1281.8cm^2$ **3)** $414.7cm^2$ **4)** $89.5cm^2$ / $8953.5mm^2$ **5)** $251.3cm^2$

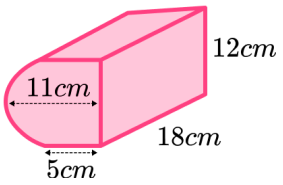
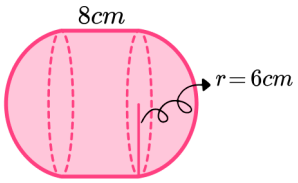
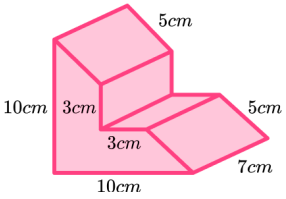
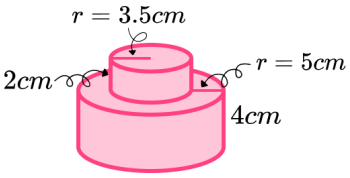
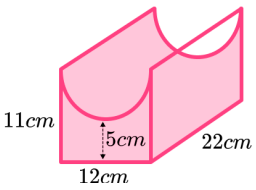
How to Calculate Surface Area - Answers

Group B contd	**6)** 	**6)** $414.7m^2$
	7) 	**7)** $175.9mm^2$
	8) 	**8)** $0.754m^2$ / $7539.8cm^2$
	9) 	**9)** $5026.5cm^2$
	10) 	**10)** $1256.6cm^2$
	11) 	**11)** $2.0m^2$
	12) 	**12)** $452.4mm^2$

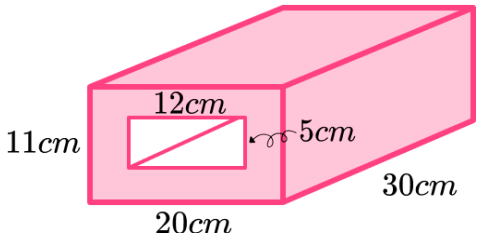
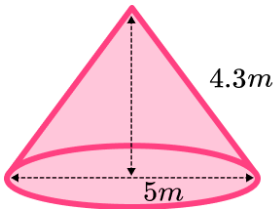
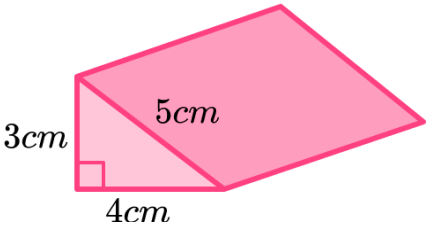
How to Calculate Surface Area - Answers

Group C	Find the surface area of each shape. Give your answers to 1 d.p.	
	1) 	**1)** $471.2m^2$
	2) 	**2)** $446cm^2$
	3) 	**3)** $376cm^2$
	4) 	**4)** $469mm^2$
	5) 	**5)** $3769.9mm^2$
	6) 	**6)** $1023.7mm^2$
	7) 	**7)** $5315.6m^2$

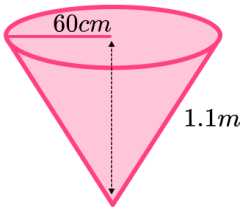
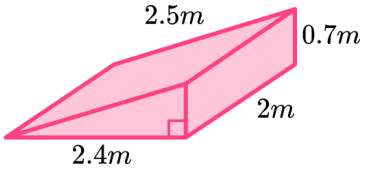
How to Calculate Surface Area - Answers

8)		**8)** $968.4cm^2$
9)		**9)** $754.0cm^2$
10)		**10)** $330cm^2$
11)		**11)** $326.7cm^2$
12)		**12)** $1313.6cm^2$

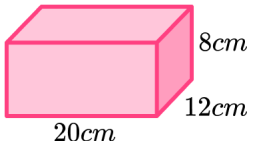
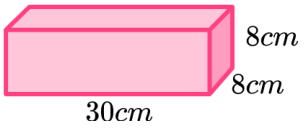
How to Calculate Surface Area - Answers

	Question	Answer
	Applied Questions	
1)	Calculate the surface area of this shape  	$3200cm^2$
2)	**a)** One biscuit has a diameter of $6cm$ and a height of $8mm$. Work out the height of 20 biscuits. Give your answer in cm. **b)** 20 biscuits are stacked and packaged in a plastic wrapper. Calculate the surface area of the wrapper. Give your answer to 3sf.	**a)** $16cm$ **b)** $829cm^2$
3)	Dave owns a glamping site. He has 12 canvas tents, each in the shape below.  Dave needs to buy soap to clean the curved surface area of the tents. 1 litre of soap will clean $20m^2$ of canvas. How many litres of soap does Dave need?	20. 3 litres
4)	The surface area of this shape is $108cm^2$. Work out the length of the shape.  	$8cm$

How to Calculate Surface Area - Answers

	Question	Answer	
	Exam Questions		
1)	Calculate the surface area of the cone. Give your answer in m^2 to 1dp.  	Curved surface area: $\pi \times 0.6 \times 1.1 = 2.0734...$ Area of circle: $\pi \times 0.6^2 = 1.13097...$ Total surface area: $2.0734 + 1.13097 = 3.2m^2$	**(1)** **(1)** **(1)**
2) (a)	Jonny has designed a bike ramp as shown.  Jonny intends to construct the bike ramp from sheets of wood. Calculate the surface area of wood Jonny requires to build the ramp.	**(a)** Area of triangle: $\frac{1}{2} \times 2.4 \times 0.7 = 0.84m^2$ Areas of rectangular faces: $4.8m^2, 5m^2, 1.4m^2$ Total surface area: $0.84 + 0.84 + 4.8 + 5 + 1.4$ $= 12.88m^2$	**(1)** **(1)** **(1)**
(b)	The wood costs £18.20 per square metre. How much will it cost Jonny to build the ramp?	**(b)** $12.88 \times 18.20 = £234.42$	**(1)**
3)	A new planet has been discovered. The radius of the planet is $6256km$. Work out the surface area of the planet. Give your answer to 3sf.	$4 \times \pi \times 6256^2$ $491\,816\,782.3\ km^2$ $492\,000\,000\ km^2$	**(1)** **(1)** **(1)**

How to Calculate Surface Area - Mark Scheme

4) (a)	This box has a volume of $1920cm^3$. Work out the surface area of the box.  	**(a)** Areas of rectangles: $240cm^2$, $160cm^2$, $96cm^2$ Total surface area: $240 + 240 + 160 + 160 + 96 + 96$ $= 992cm^2$	**(1)** **(1)**
(b)	This box also has a volume of $1920cm^2$. Is the surface area of this box the same as the box above? Show how you decide.  	Surface area: $240 + 240 + 240 + 240 + 64 + 64$ $= 1088cm^2$ No	**(1)** **(1)**