

Surface Area of Cones - Worksheet

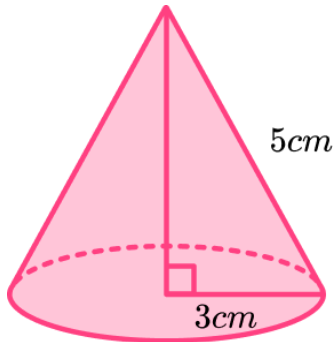
Skill

Group A - Curved surface area of a cone

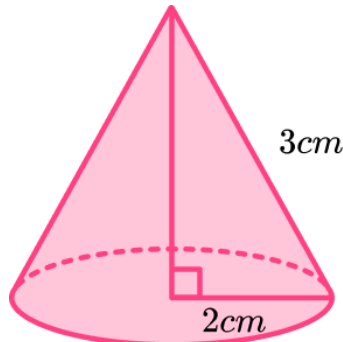
Work out the curved surface area of the cone.

Diagrams are NOT to scale. Give your answer correct to 2 d.p:

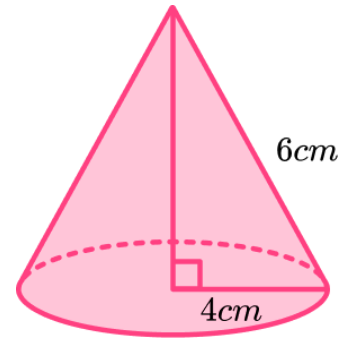
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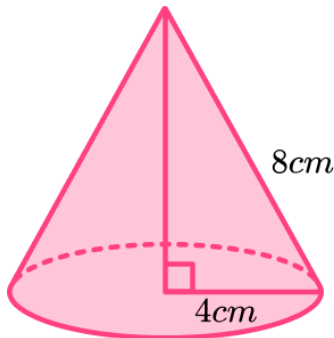
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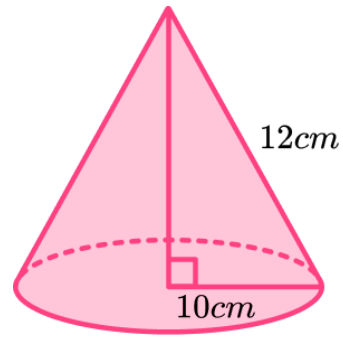
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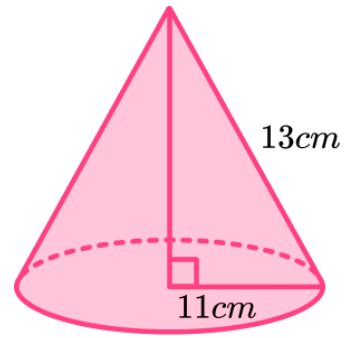
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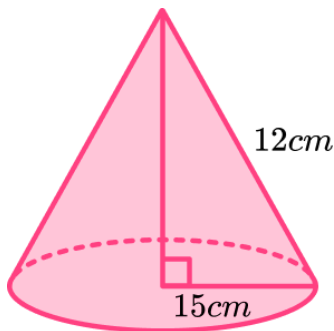
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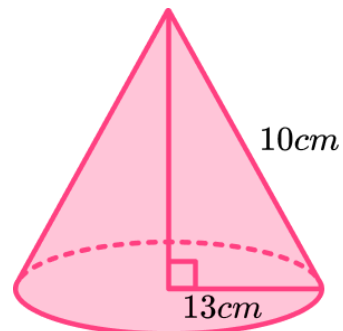
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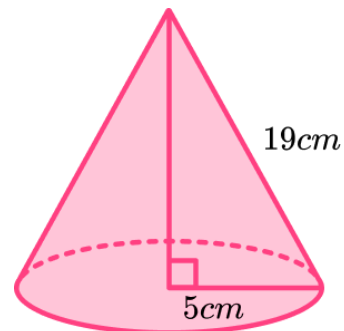
7)



8)



9)



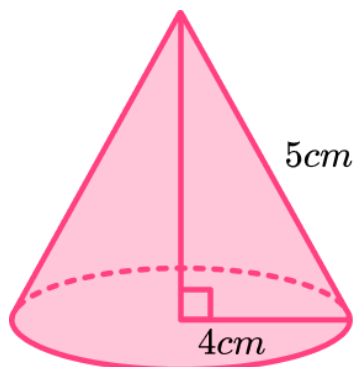
Surface Area of Cones - Worksheet

Group B - Surface area of a cone

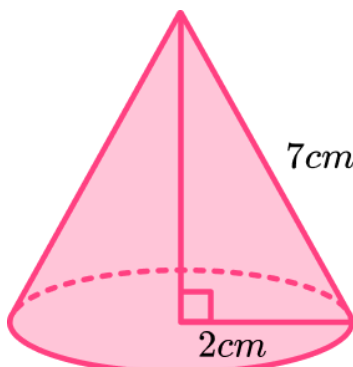
Work out the total surface area of the cone.

Diagrams are NOT to scale. Give your answer correct to 2 d.p:

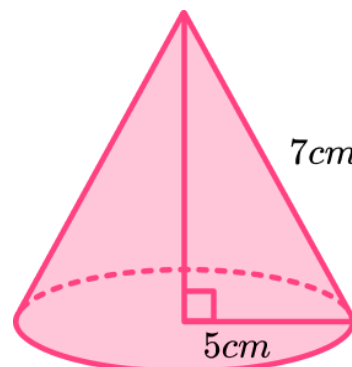
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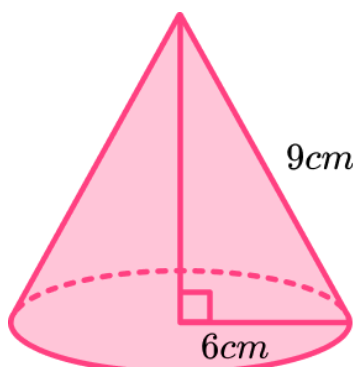
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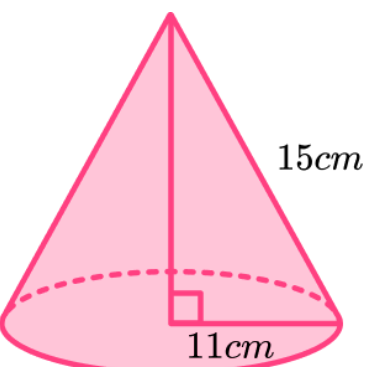
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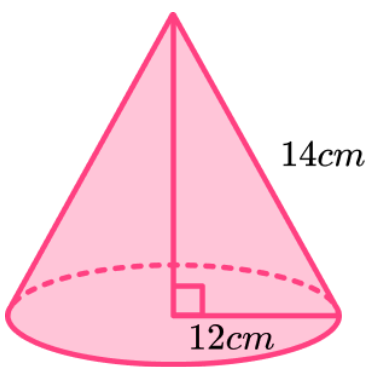
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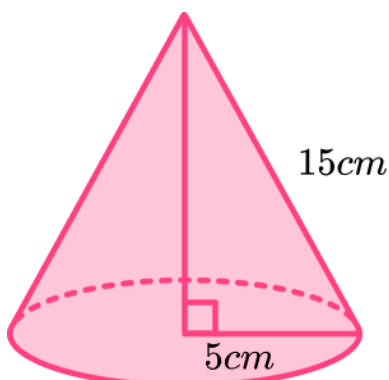
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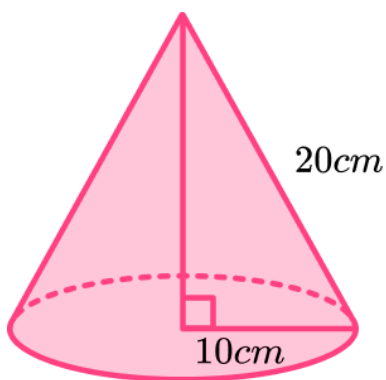
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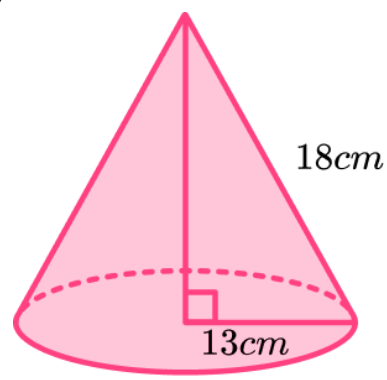
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8)



9)



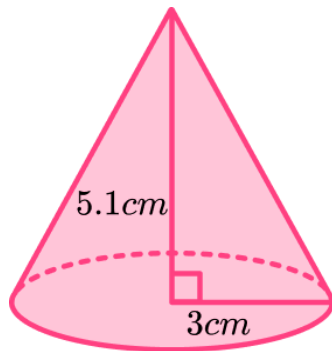
Surface Area of Cones - Worksheet

Group C - Surface area of a cone (with decimals)

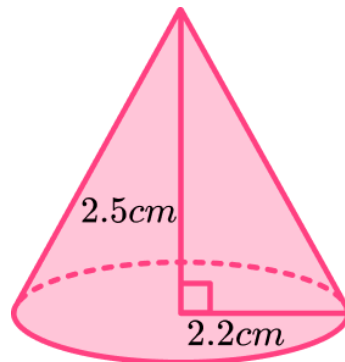
Work out the total surface area of the cone.

Diagrams are NOT to scale. Give your answer correct to 2 d.p:

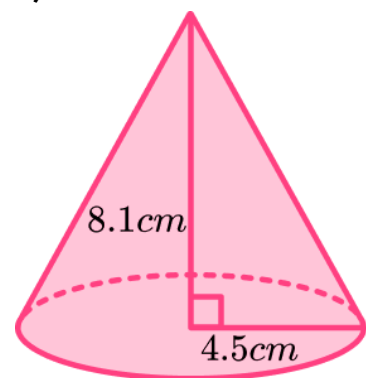
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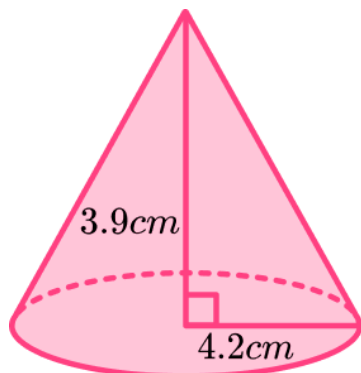
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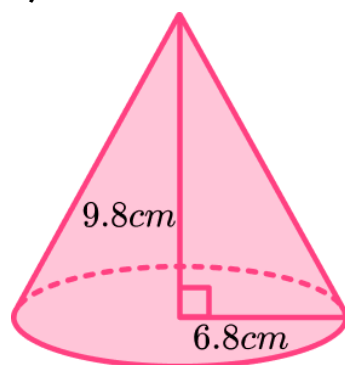
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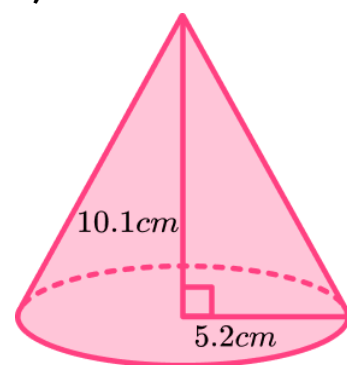
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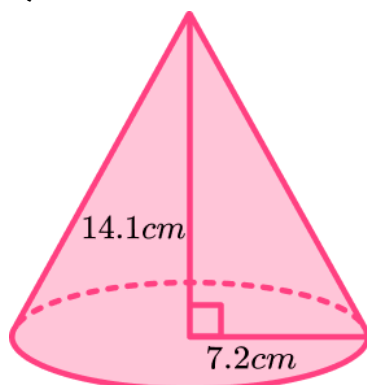
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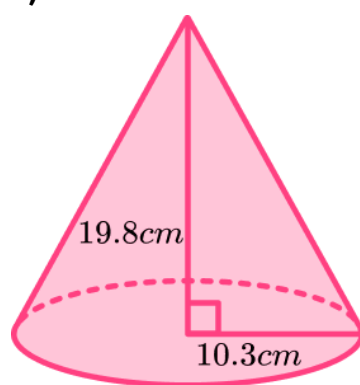
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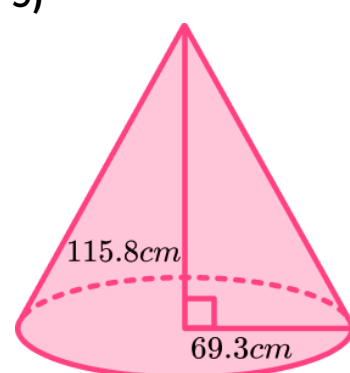
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8)



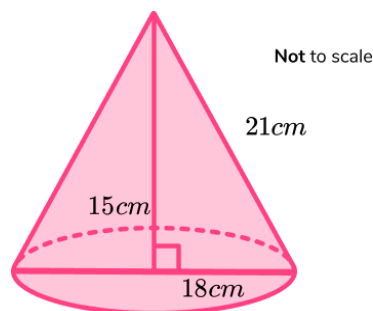
9)



Surface Area of Cones - Worksheet

Applied

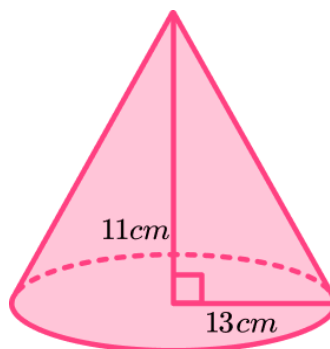
1) (a)



Work out the surface area of the cone above.
Diagrams are NOT to scale. Leave your answer in terms of π .

(b) Convert your answer in (a) to 3 significant figures

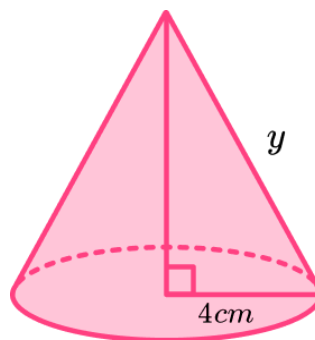
2) (a)



Work out the surface area of the cone above.
Diagrams are NOT to scale. Give your answer correct to 3 significant figures.

(b) Convert your answer in (a) to m^2 to 3 significant figures

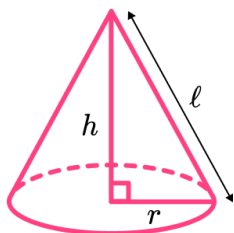
3) (a)



$$\text{Surface Area} = 150.8\text{cm}^2$$

Shown above is a cone with a base radius of 4cm and a surface area of 150.8cm^2
What is the value of y ?

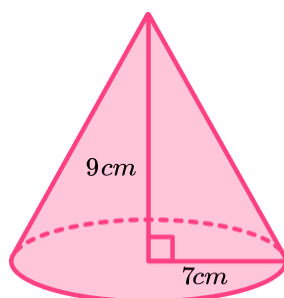
Surface Area of Cones - Exam Questions



$$\text{Volume of a cone} = \frac{1}{3}\pi r^2 h$$

$$\text{Curved surface area of a cone} = \pi r l$$

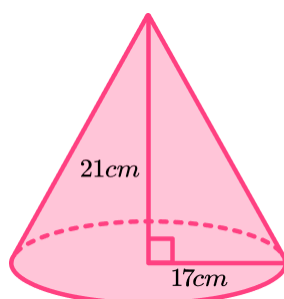
- 1) Here is a cone.



Calculate the **total surface area** of the cone.
Give your answer to 3 significant figures.

..... cm^2
(4 marks)

- 2) Here is a cone.

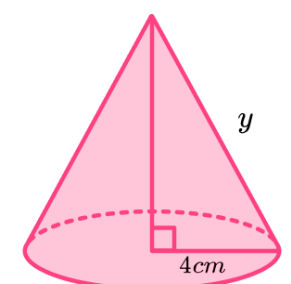


Calculate the **total surface area** of the cone.
Give your answer in terms of π .

..... cm^2
(3 marks)

Surface Area of Cones - Exam Questions

- 3) Here is a cone.



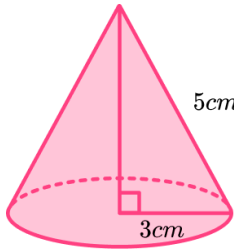
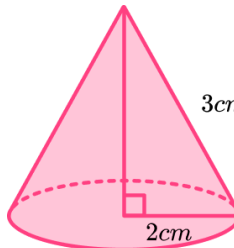
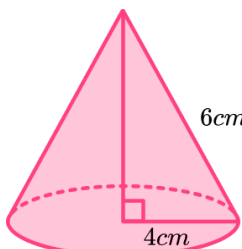
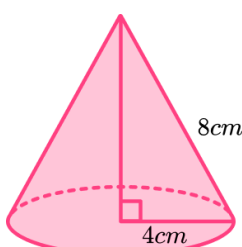
$$\text{Surface Area} = 280\text{cm}^2$$

It has a base radius of 4cm and a surface area of 280cm^2 . What is the value of y ?

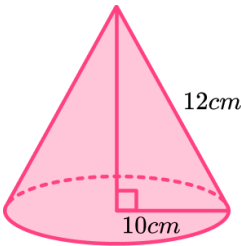
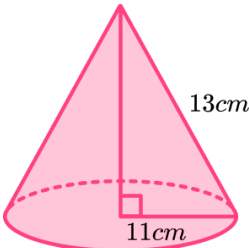
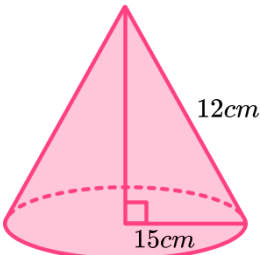
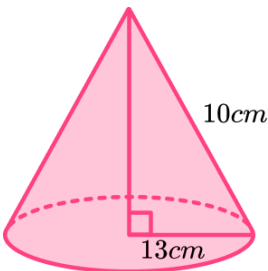
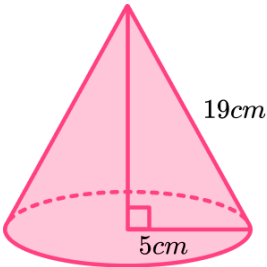
.....

(4 marks)

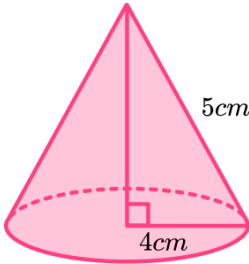
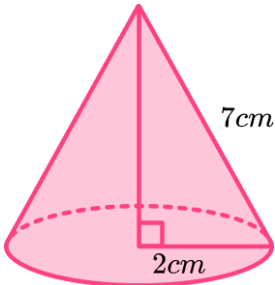
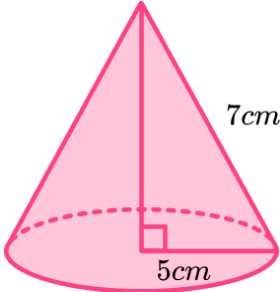
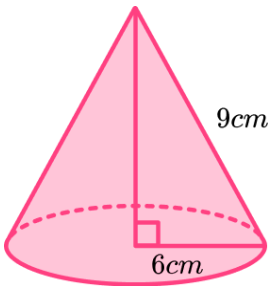
Surface Area of Cones - Answers

	Question	Answer
	Skill Questions	
Group A	Work out the curved surface area of the cone. Diagrams are NOT to scale. Give your answer correct to 2 d.p: 1)  2)  3)  4) 	1) 47.12cm^2 2) 18.85cm^2 3) 75.40cm^2 4) 100.53cm^2

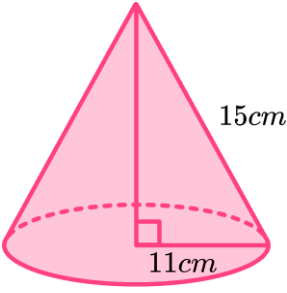
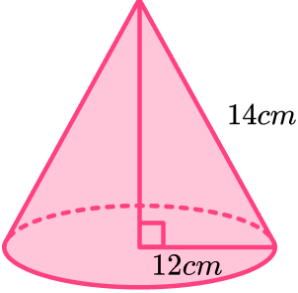
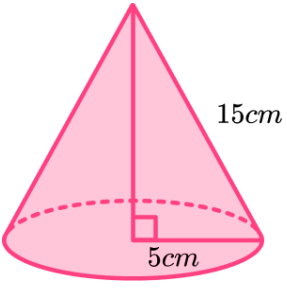
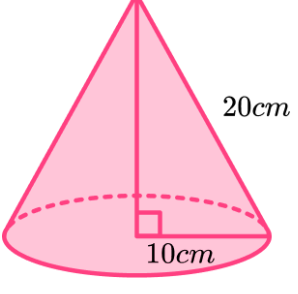
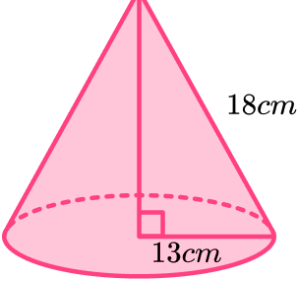
Surface Area of Cones - Answers

Group A contd	5) 	5) 376.99cm^2
	6) 	6) 449.25cm^2
	7) 	7) 565.49cm^2
	8) 	8) 408.41cm^2
	9) 	9) 298.45cm^2

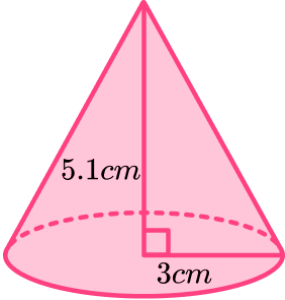
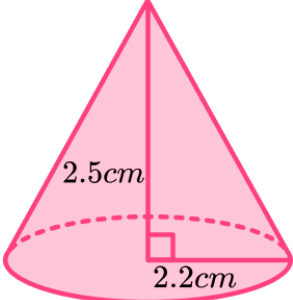
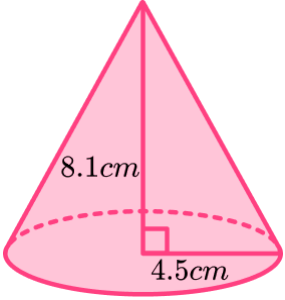
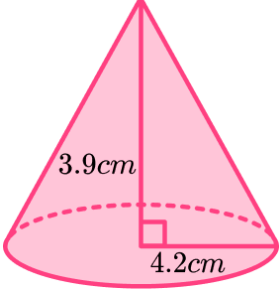
Surface Area of Cones - Answers

Group B	Work out the total surface area of the cone. Diagrams are NOT to scale. Give your answer correct to 2 d.p: 1)  2)  3)  4) 	1) 113.10cm^2 2) 56.55cm^2 3) 188.50cm^2 4) 282.74cm^2
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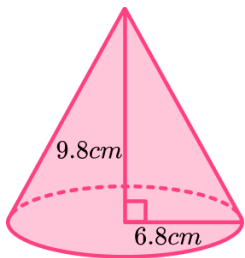
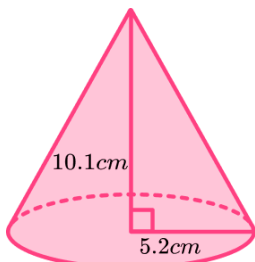
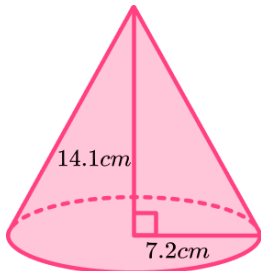
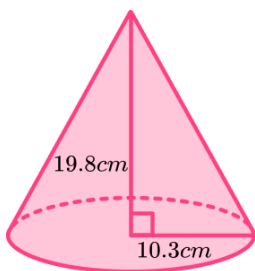
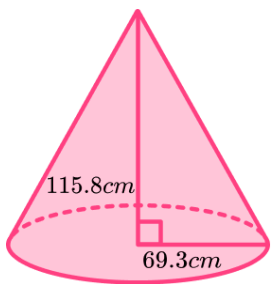
Surface Area of Cones - Answers

Group B contd	5) 	5) 898.50cm^2
	6) 	6) 980.18cm^2
	7) 	7) 314.16cm^2
	8) 	8) 942.48cm^2
	9) 	9) 1266.06cm^2

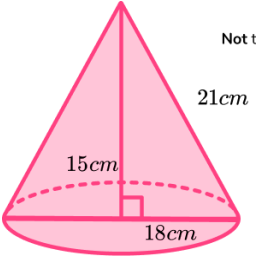
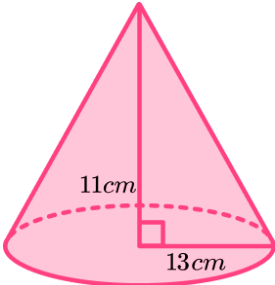
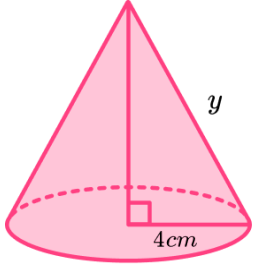
Surface Area of Cones - Answers

Group C	Work out the total surface area of the cone. Diagrams are NOT to scale. Give your answer correct to 2 d.p: 1)  2)  3)  4) 	1) 84.04cm^2 2) 38.22cm^2 3) 194.61cm^2 4) 131.04cm^2
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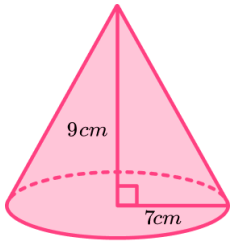
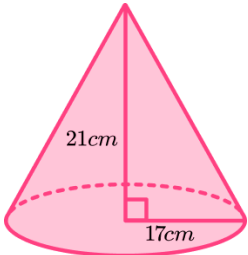
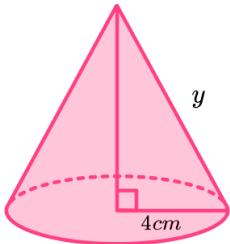
Surface Area of Cones - Answers

Group C contd	5)  6)  7)  8)  9) 	5) $400.09cm^2$ 6) $270.53cm^2$ 7) $520.97cm^2$ 8) $1055.49cm^2$ 9) $44468.26cm^2$
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Surface Area of Cones - Answers

	Question	Answer
	Applied Questions	
1)	a)  Work out the surface area of the cone above. Diagrams are NOT to scale. Leave your answer in terms of π. b) Convert your answer in (a) to 3 significant figures	a) $A = 270\pi\text{cm}^2$ b) 848cm^2
2)	a)  Work out the surface area of the cone above. Diagrams are NOT to scale. Give your answer correct to 3 significant figures. b) Convert your answer in (a) to m^2 to 3 significant figures	a) 1230cm^2 b) 0.123m^2
3)	 $\text{Surface Area} = 150.8\text{cm}^2$ Shown above is a cone with a base radius of 4cm and a surface area of 150.8cm^2. What is the value of y?	$A = \pi rl + \pi r^2$ $150.8 = \pi(4)y + \pi(4^2)$ $150.8 - 16\pi = 4\pi y$ $y = 8.000282709$ $y = 8\text{cm}$

Surface Area of Cones - Mark Scheme

	Question	Answer
	Exam Questions	
1)	Here is a cone.  Calculate the total surface area of the cone. Give your answer to 3 significant figures.	$SA = \pi rl + \pi r^2$ or $SA = \pi r(r + \sqrt{h^2 + r^2})$ $SA = \pi(7)(7 + \sqrt{(9)^2 + (7)^2})$ $SA = 404.6757118$ 405cm^2
2)	Here is a cone.  Calculate the total surface area of the cone. Give your answer in terms of π.	$SA = \pi rl + \pi r^2$ or $SA = \pi r(r + \sqrt{h^2 + r^2})$ $SA = \pi(17)(17 + \sqrt{(21)^2 + (17)^2})$ $SA = 748.31\pi\text{cm}^2$
3)	Here is a cone.  Surface Area = 280cm^2 It has a base radius of 4cm and a surface area of 280cm^2. What is the value of y?	$SA = \pi rl + \pi r^2$ $280 = \pi(4)y + \pi(4^2)$ $280 - 16\pi = 4\pi y$ $y = 18.28... \text{cm}$

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