

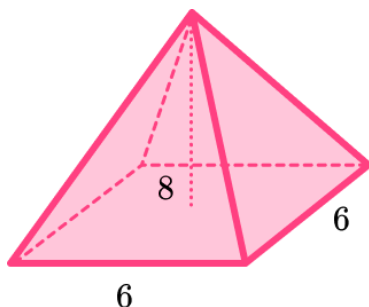
Volume and Surface Area of Pyramids - Worksheet

Skill

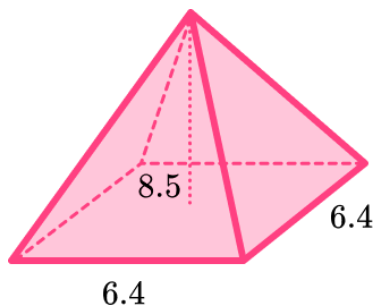
Group A - Volume of a pyramid

Work out the volume of the pyramid. All dimensions are in cm. Give answers correct to 3 significant figures where appropriate:

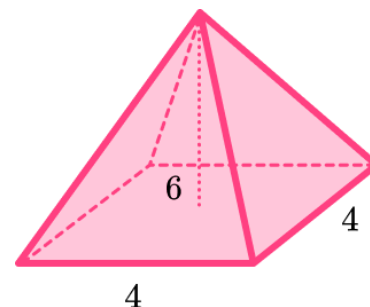
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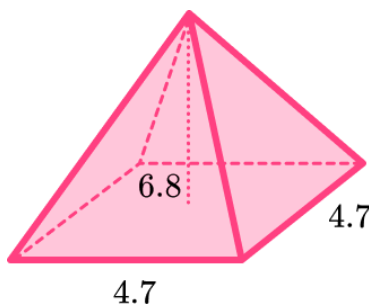
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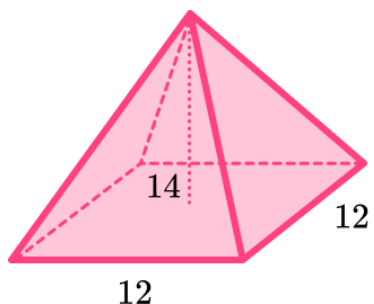
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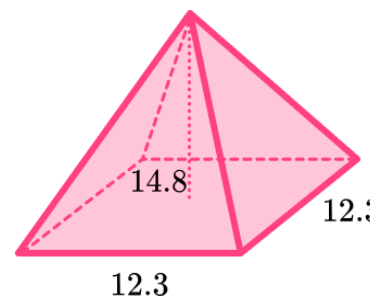
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5)



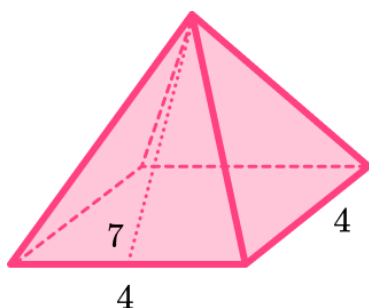
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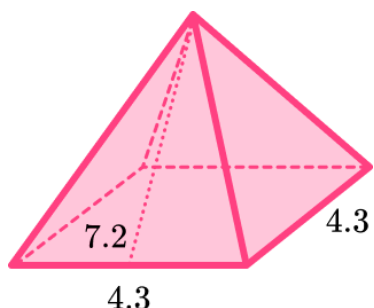
Group B - Surface area of a pyramid

Work out the surface area of the pyramid. All dimensions are in cm. Give answers correct to 3 significant figures where appropriate:

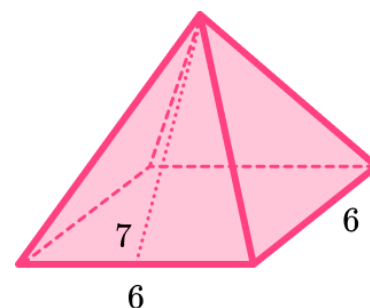
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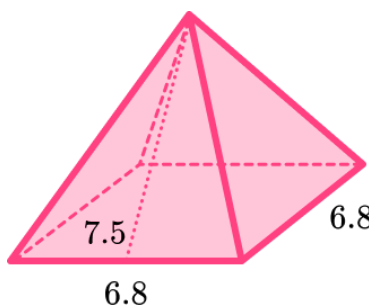
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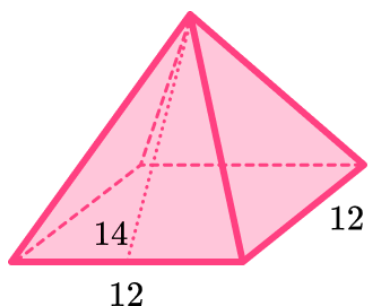
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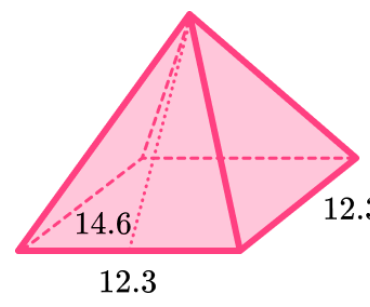
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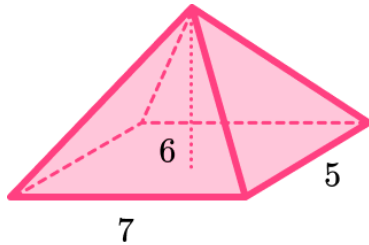


Volume and Surface Area of Pyramids - Worksheet

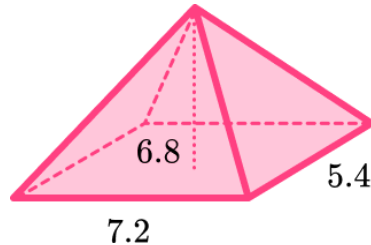
Group C - Volume of a rectangular-based pyramid

Work out the volume of the pyramid. All dimensions are in cm. Give answers correct to 3 significant figures where appropriate:

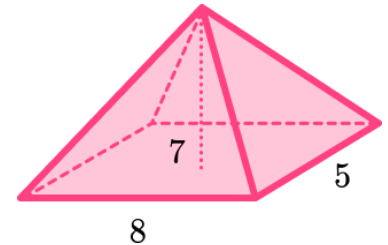
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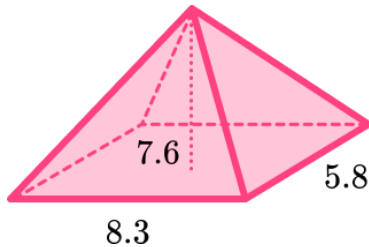
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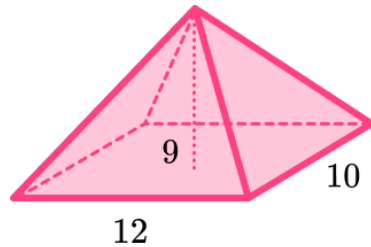
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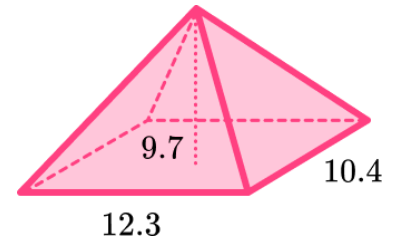
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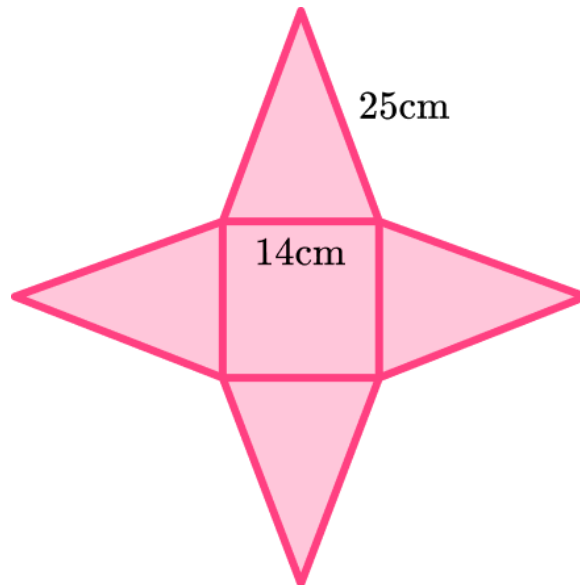
Volume and Surface Area of Pyramids - Worksheet

Applied

- 1)
 - (a) A pyramid has a square base with sides $9m$ and a perpendicular height of $11m$. Calculate the volume of the pyramid.
 - (b) A pyramid has a square base with sides $9.7m$ and a perpendicular height of $11.3m$. Calculate the volume of the pyramid.
Give your answer correct to 3 significant figure
- 2)
 - (a) A pyramid has a rectangular base with slides $4m$ and $6m$ and a perpendicular height $5m$. Calculate the volume of the pyramid.
 - (b) A pyramid has a rectangular base with slides $4.8m$ and $6.7m$ and a perpendicular height $5.9m$. Calculate the volume of the pyramid.
Give your answer correct to 3 significant figures.
- 3)
 - (a) A pyramid has a volume of $50cm^3$ and the area of its base is $15cm^2$.
Find the height of the pyramid.
 - (b) A pyramid has a volume of $83cm^3$ and the area of its base is $24cm^2$.
Find the height of the pyramid. Give the answer correct to 3 significant figures.

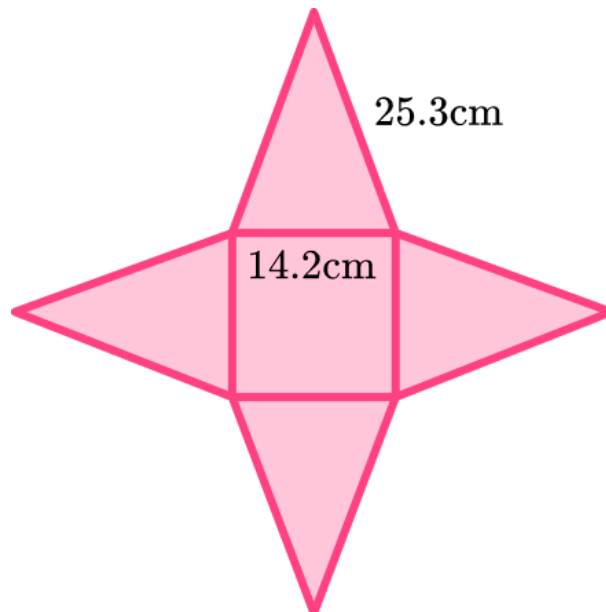
Volume and Surface Area of Pyramids - Worksheet

- 4) (a) Here is the net of a square-based pyramid.



Calculate the surface area of the pyramid.

- (b) Here is the net of a square-based pyramid.



Calculate the surface area of the pyramid.
Give your answer correct to 3 significant figures.

Volume and Surface Area of Pyramids - Exam Questions

- 1) A square based pyramid has a base with side 15cm .
The perpendicular height is 23cm .

Calculate the volume of the pyramid.

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

- 2) A pyramid has volume 340cm^3 and a base 100cm^2 .
Find the height of the pyramid.

Circle the correct answer:

9.4cm

9.8cm

10.2cm

10.6cm

(1 mark)

- 3) (a) Here is a pyramid.

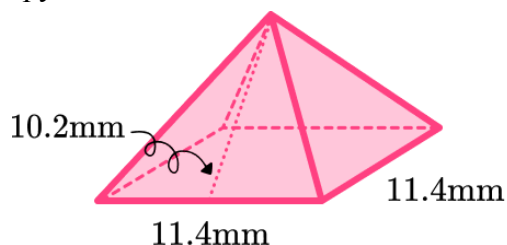


Diagram NOT to scale

Calculate its surface area.

Give your answer correct to 3 significant figures.

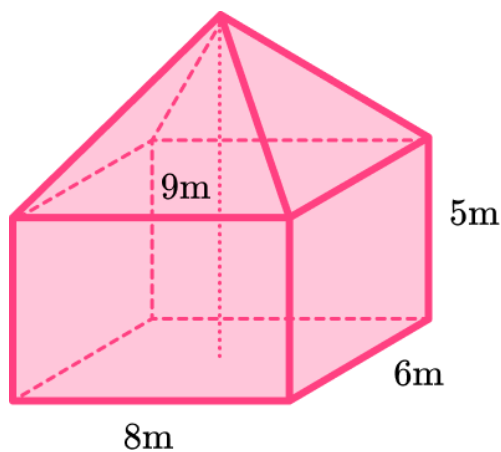
.....
(3)

- (b) State the correct units for the surface area for part (a).

.....
(1)
(4 marks)

Volume and Surface Area of Pyramids - Exam Questions

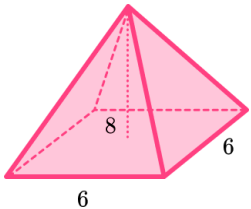
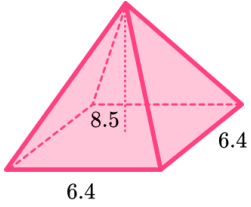
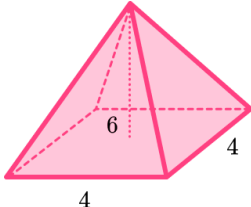
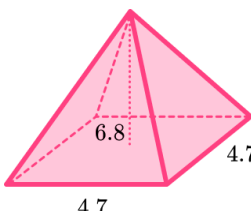
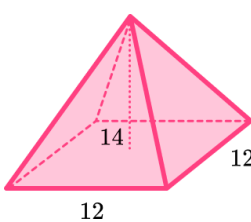
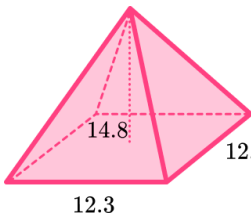
- 4) The diagram shows a solid made of a cuboid and a pyramid.



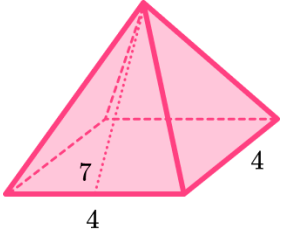
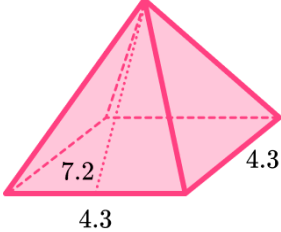
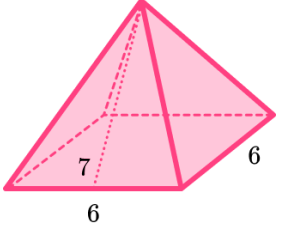
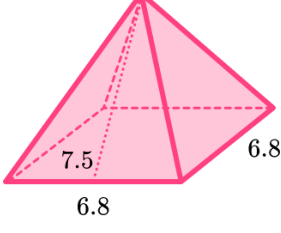
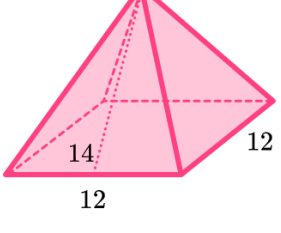
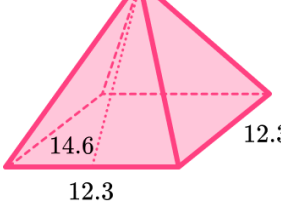
Calculate the volume of the solid.

..... m^3
(3)
(3 marks)

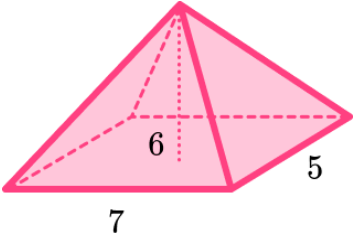
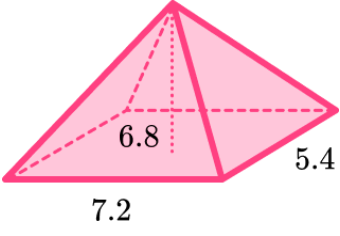
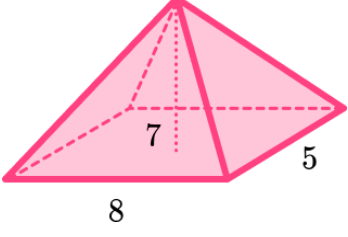
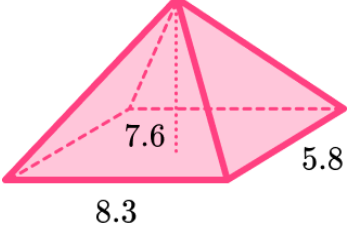
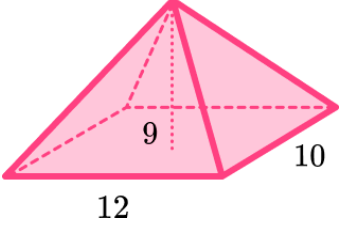
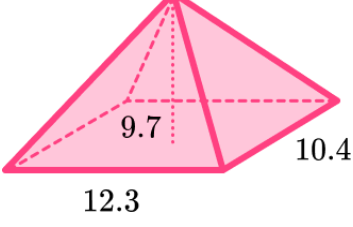
Volume and Surface Area of Pyramids - Answers

	Question	Answer
	Skill Questions	
Group A	<p>Work out the volume of the pyramid. All dimensions are in cm. Give answers correct to 3 significant figures where appropriate:</p> <p>1)</p>  <p>2)</p>  <p>3)</p>  <p>4)</p>  <p>5)</p>  <p>6)</p> 	<p>1) 96cm^3</p> <p>2) 116cm^3</p> <p>3) 32cm^3</p> <p>4) 50.1cm^3</p> <p>5) 672cm^3</p> <p>6) 746cm^3</p>

Volume and Surface Area of Pyramids - Answers

Group B	<p>Work out the surface area of the pyramid. All dimensions are in cm. Give answers correct to 3 significant figures where appropriate:</p> <p>1)</p>  <p>2)</p>  <p>3)</p>  <p>4)</p>  <p>5)</p>  <p>6)</p> 	<p>1) 72cm^2</p> <p>2) 80.4cm^2</p> <p>3) 120cm^2</p> <p>4) 148cm^2</p> <p>5) 480cm^2</p> <p>6) 510cm^2</p>
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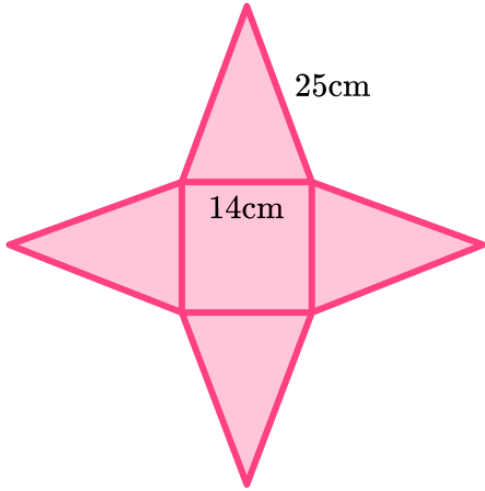
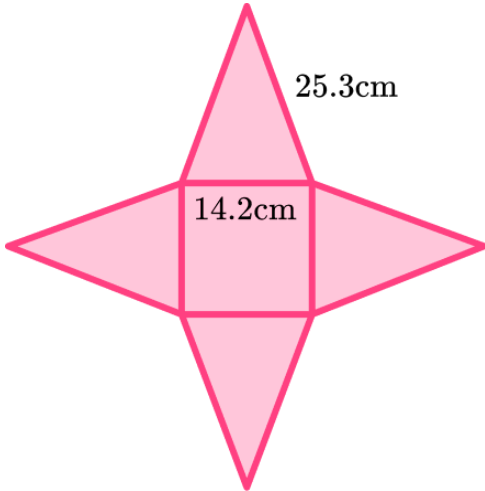
Volume and Surface Area of Pyramids - Answers

<p>Group C</p>	<p>Work out the volume of the pyramid. All dimensions are in cm. Give answers correct to 3 significant figures where appropriate:</p> <p>1)</p>  <p>2)</p>  <p>3)</p>  <p>4)</p>  <p>5)</p>  <p>6)</p> 	<p>1) 70cm^3</p> <p>2) 88.1cm^3</p> <p>3) 93.3cm^3</p> <p>4) 122cm^3</p> <p>5) 360cm^3</p> <p>6) 414cm^3</p>
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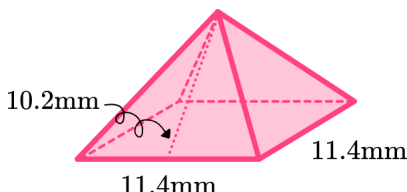
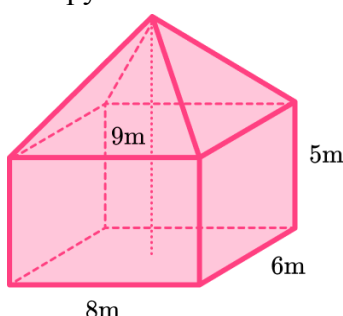
Volume and Surface Area of Pyramids - Answers

	Question	Answer
	Applied Questions	
1)	<p>a) A pyramid has a square base with sides $9m$ and a perpendicular height of $11m$. Calculate the volume of the pyramid.</p> <p>b) A pyramid has a square base with sides $9.7m$ and a perpendicular height of $11.3m$. Calculate the volume of the pyramid. Give your answer correct to 3 significant figures.</p>	<p>a) $297m^3$</p> <p>b) $354m^3$ (to 3 sf)</p>
2)	<p>a) A pyramid has a rectangular base with sides $4m$ and $6m$ and a perpendicular height $5m$. Calculate the volume of the pyramid.</p> <p>b) A pyramid has a rectangular base with sides $4.8m$ and $6.7m$ and a perpendicular height $5.9m$. Calculate the volume of the pyramid. Give your answer correct to 3 significant figures.</p>	<p>a) $40m^3$</p> <p>b) $63.2m^3$ (to 3 sf)</p>
3)	<p>a) A pyramid has a volume of $50cm^3$ and the area of its base is $15cm^2$. Find the height of the pyramid.</p> <p>b) A pyramid has a volume of $83cm^3$ and the area of its base is $24cm^2$. Find the height of the pyramid. Give the answer correct to 3 significant figures.</p>	<p>a) $10cm$</p> <p>b) $10.4cm$ (to 3 sf)</p>

Volume and Surface Area of Pyramids - Answers

4)	<p>a) Here is the net of a square-based pyramid.</p>  <p>Calculate the surface area of the pyramid.</p> <p>b) Here is the net of a square-based pyramid.</p>  <p>Calculate the surface area of the pyramid. Give your answer correct to 3 significant figures.</p>	<p>a) 868cm^2</p> <p>b) 891cm^2 (to 3 sf)</p>
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Volume and Surface Area of Pyramids - Mark Scheme

	Question	Answer	
	Exam Questions		
1)	A square based pyramid has a base with side 15cm . The perpendicular height is 23cm . Calculate the volume of the pyramid.	$\frac{1}{3} \times 15^2 \times 23$ 1725cm^3	(1) (1)
2)	A pyramid has volume 340cm^3 and a base 100cm^2 . Find the height of the pyramid. Circle the correct answer: 9.4cm 9.8cm 10.2cm 10.6cm	10.2cm	(1)
3) (a)	Here is a pyramid.  Calculate its surface area. Give your answer correct to 3 significant figures.	(a) $\frac{1}{2} \times 11.4 \times 10.2 = 58.14$ $11.4^2 + 4 \times 58.14$ $= 362.52 = 363 \text{ (3 sf)}$	(1) (1) (1)
(b)	State the correct units for the surface area for part (a).	(b) mm^2	(1)
4)	The diagram shows a solid made of a cuboid and a pyramid.  Calculate the volume of the solid.	$8 \times 6 \times 5 = 240$ $\frac{1}{3} \times (8 \times 6) \times 4 = 64$ $240 + 64 = 304 \text{ m}^3$	(1) (1) (1)

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