Name:

Exam Style Questions

Surface Area of a Cone

Corbettmaths

Equipment needed: Pen and Calculator

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

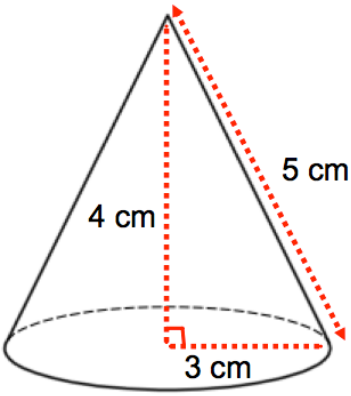
Video Tutorial

www.corbettmaths.com/contents

Video 314

Answers and Video Solutions

1. A cone has base radius 3cm, perpendicular height 4cm and slant height 5cm.



Work out the surface area of the cone.

.....cm²

(3)

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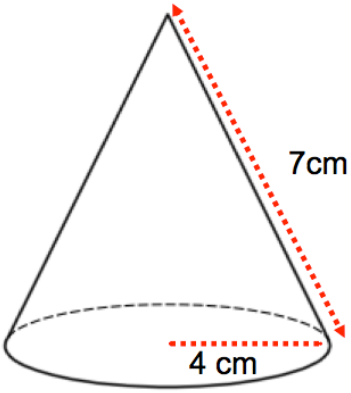
2. A cone has base radius 4cm and slant height 7cm.

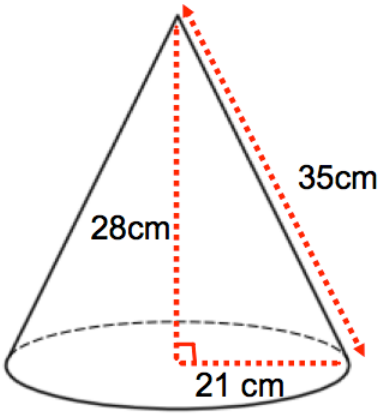


Work out the surface area of the cone.

.....cm²

(3)

3. A cone has base radius 21cm, perpendicular height 28cm and slant height 35cm.



Work out the surface area of the cone.

.....cm²

(3)

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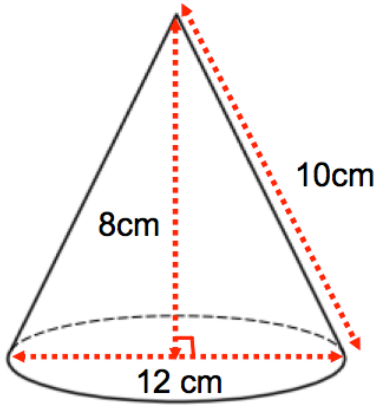
4. A cone has base diameter 12cm, perpendicular height 8cm and slant height 10cm.

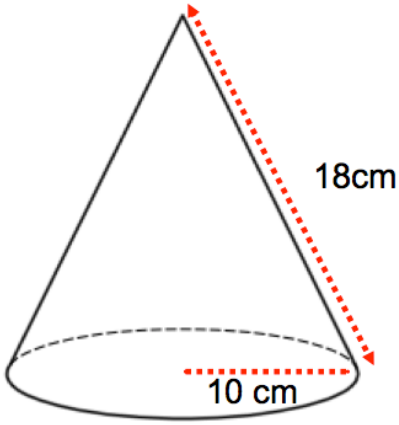


Work out the surface area of the cone.

.....cm²

(3)

5. A cone has base radius 10cm and slant height 18cm.



Work out the surface area of the cone.
Give your answer in terms of π

.....cm²

(3)

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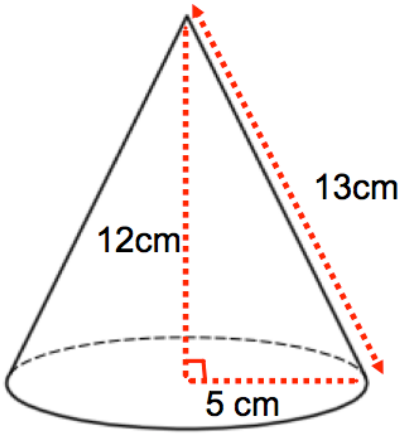
6. A cone has base radius 5cm, perpendicular height 12cm and slant height 13cm.

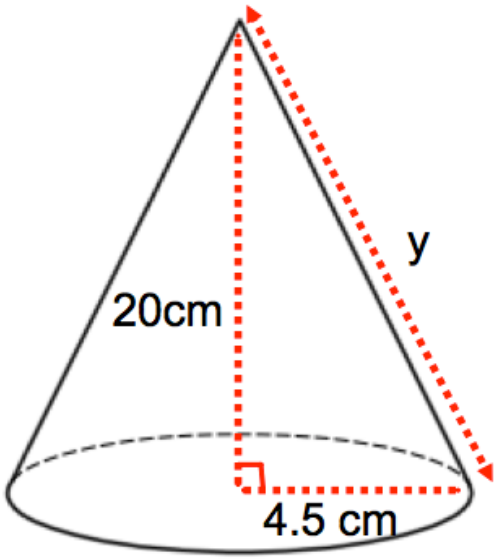


Work out the surface area of the cone.
Give your answer in terms of π

.....cm²

(3)

7. The diagram shows a cone.
The vertical height is 20cm.
The radius of the base is 4.5cm.
The slant height is y



(a) Work out the value of y.

.....cm
(3)

(b) Work out the surface area of the cone.
Give your answer to one decimal place.

.....cm²
(3)

8. A cone has base diameter 10cm.
The height of the cone is 18cm.

Calculate the surface area of the cone.

.....cm²

(4)

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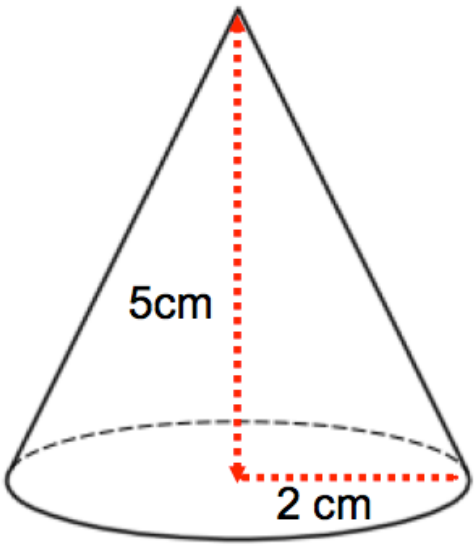
9. A cone has base of radius 2cm.
The perpendicular height of the cone is 5cm.

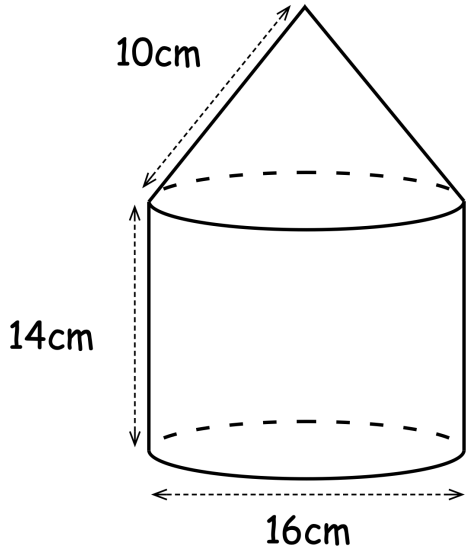


Calculate the surface area of the cone.

.....cm²

(4)

10. Jonathan made a solid wooden model by joining a cylinder and a cone.

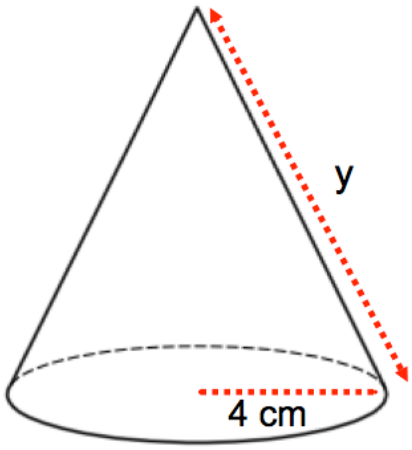


Find the total surface area of the wooden model.

.....cm²

(4)

11. Shown below is a cone.
The base has a radius of 4 cm.
The slant height is y cm.

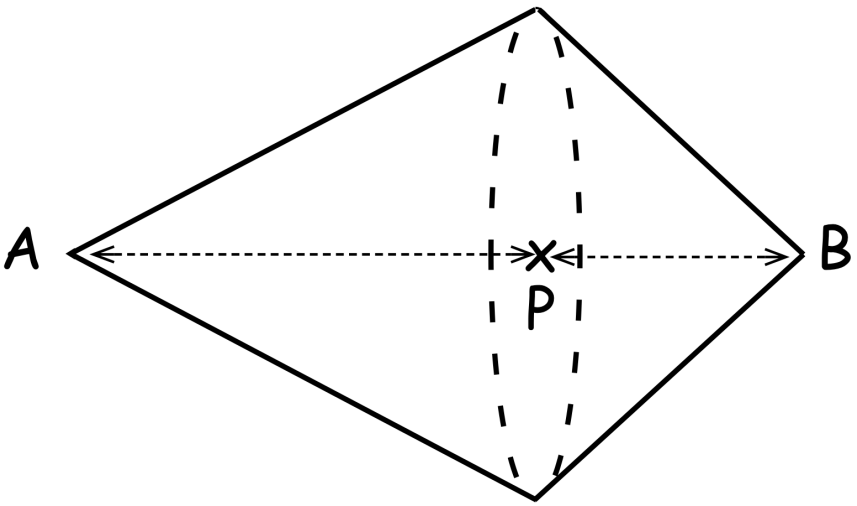


The total surface area of the cone is 48π cm²

Calculate y.

.....cm
(3)

12. Two cones, each with a base radius of 4cm, are joined together to make the solid shape below.



AP : BP = 5 : 3 where

AP is the perpendicular height of the larger cone.
BP is the perpendicular height of the smaller cone.

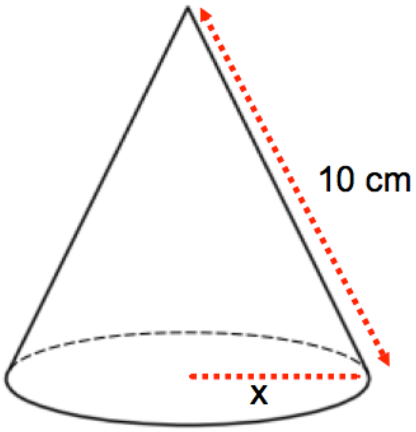
Given AB = 12cm

Find the total surface area of the shape.

.....cm²

(5)

13. Shown below is a cone.
The base has a radius of x cm.
The slant height is 10 cm.



The total surface area of the cone is 39π cm²

(a) Show $x^2 + 10x - 39 = 0$

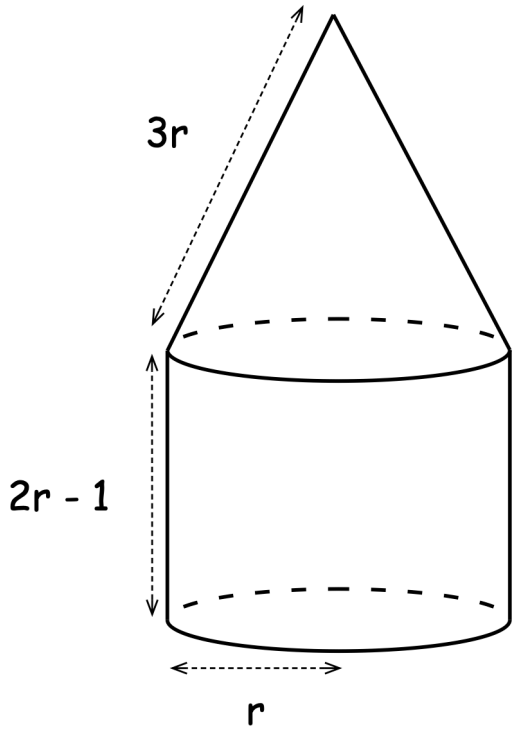
(3)

(b) Hence, find the length of the radius.

.....cm

(2)

14. A cone and cylinder are joined to make a solid shape.



Show the total surface area of the solid shape is $2\pi r(4r-1)$

(4)