Name:

Measuring Solids

Additional Tasks

YSGOL CREUDDYN
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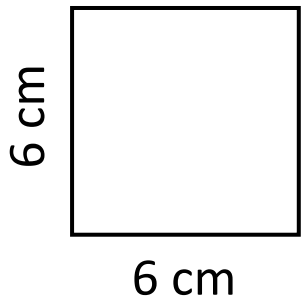
Contents

Quiz 1

Calculate the area of the following shapes.

1)



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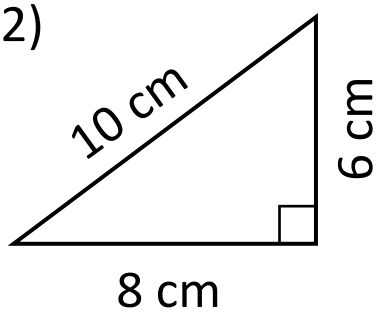

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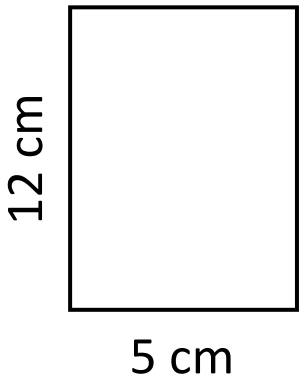

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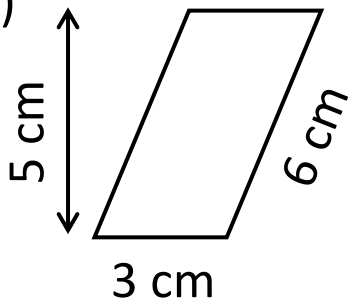

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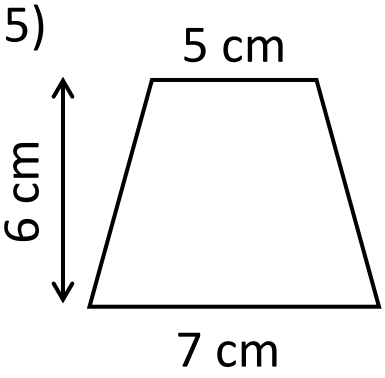

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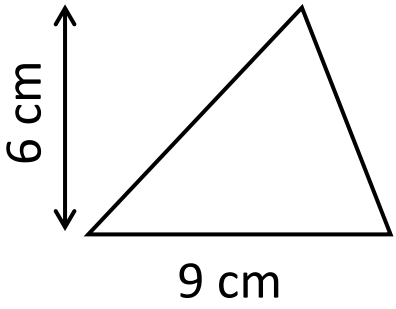

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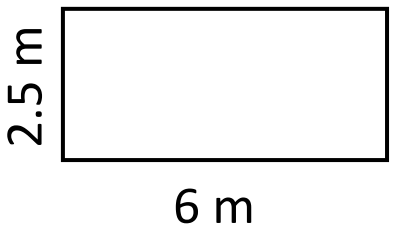

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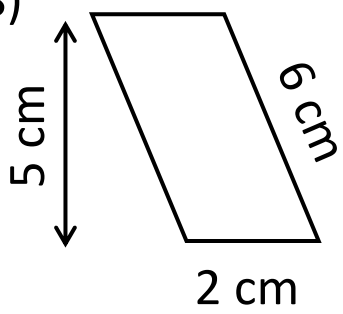

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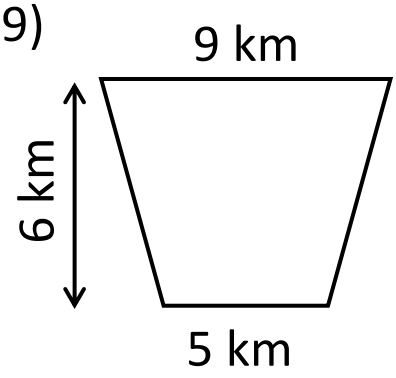

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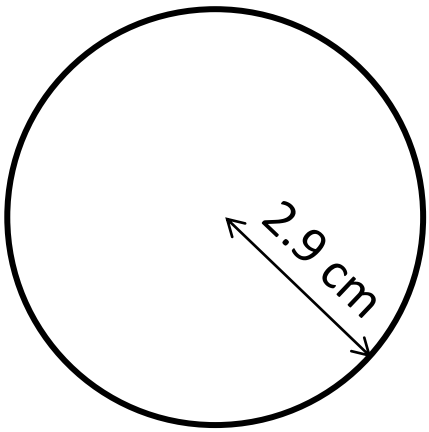
Example 1

What is the circumference and area of the circle?



Radius of the circle: 2.9 cm

Diameter of the circle: $2 \times 2.9 = 5.8$ cm

Circumference $= \pi \times$ Diameter

$= \pi \times 5.8$

$= 18.22$ cm to 2 decimal places

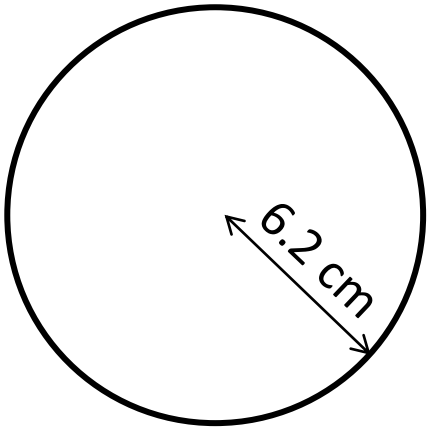
Area $= \pi \times \text{Radius}^2$

$= \pi \times 2.9^2$

$= 26.42\ \text{cm}^2$ to 2 decimal places

Exercise 1

What is the circumference and area of the circle?



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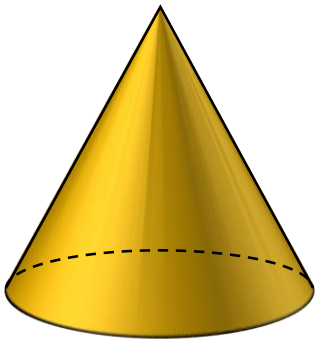
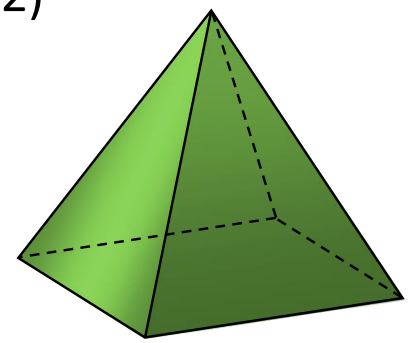
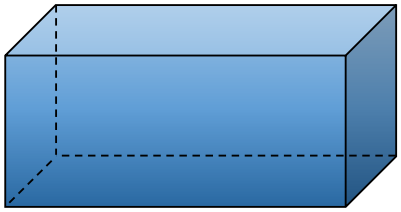
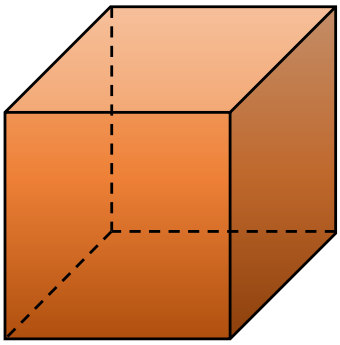
Quiz 2

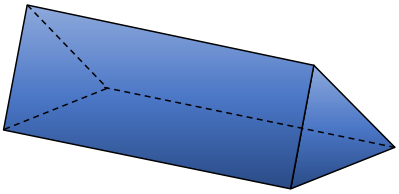
What are the names of the following solids?

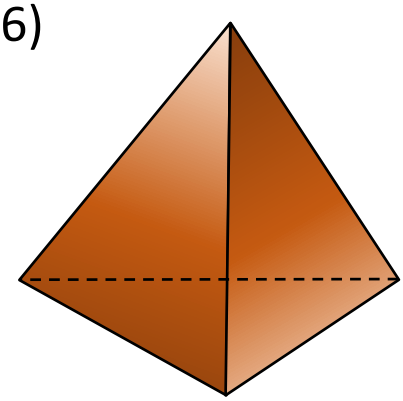
1) 

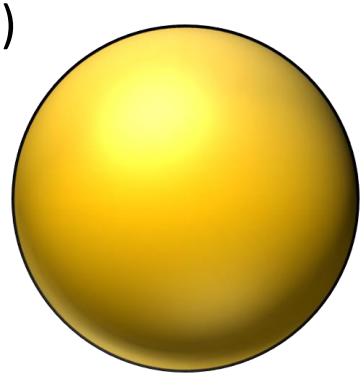
2) 

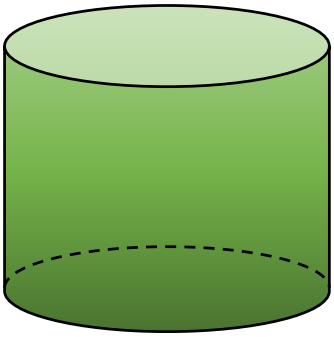
3) 

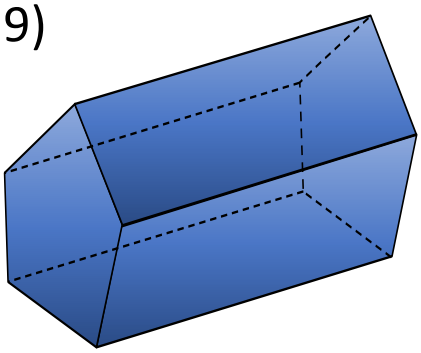
4) 

5) 

6) 

7) 

8) 

9) 

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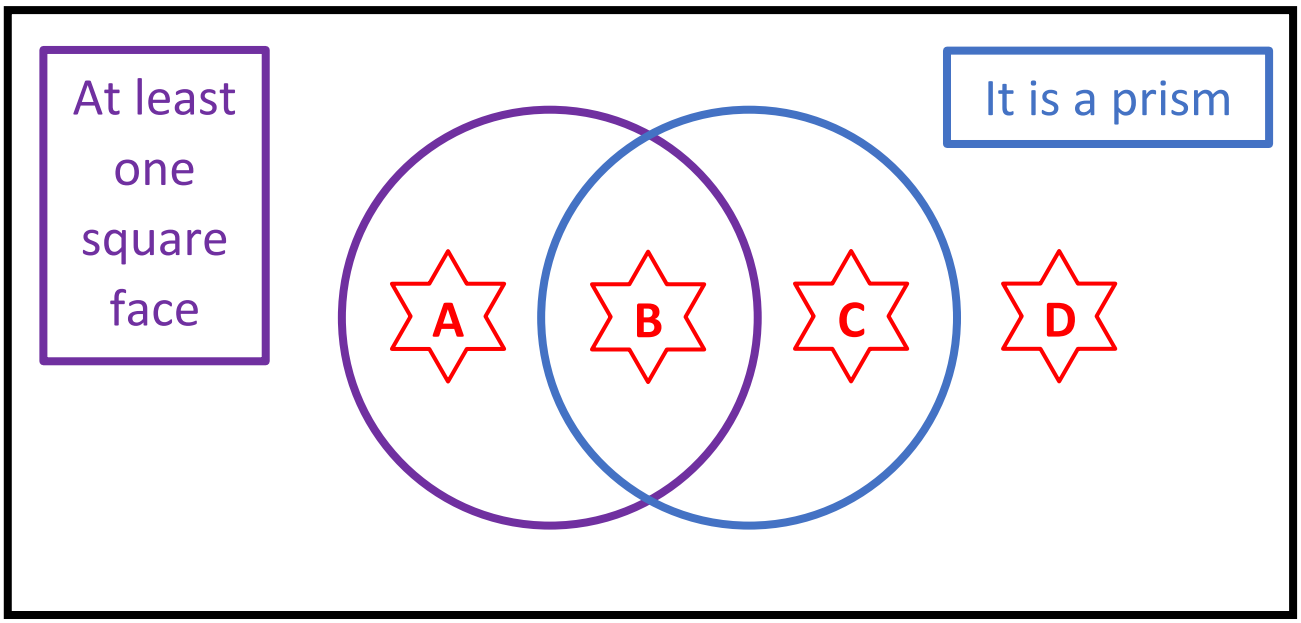
Venn Diagram Challenge 1



Think of a solid that could fit into each region.
If you think a region is impossible to fill, explain why!

A

B

C

D

Example 2

Solve the equation $x^2 + 3x - 28 = 0$

$x^2+3x-28=0$

$(x+7)(x-4)=0$

Factorising: $7\times-4=-28$,

$7+-4=3$

Either $x+7=0$ or $x-4=0$

$x=-7$ $x=4$

Exercise 2

Solve the equation $x^2 + 6x - 27 = 0$.

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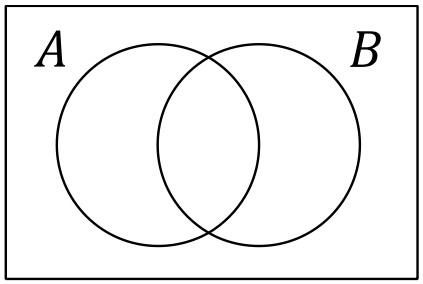
Quiz 3

1) $\sqrt{64}$

2) Shade $A \cap B$.



3) Simplify $4x + 5y - 2x + y$

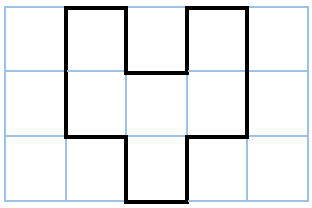
4) Draw a kite.

5) The mode of 4, 7, 2, 6, 7, 3, 2, 5

6) What is the probability of obtaining a prime number when rolling a normal fair die?

7) Write down all the factors of 22.

8) Does this net fold to make a cube?



9) Evaluate 2^4

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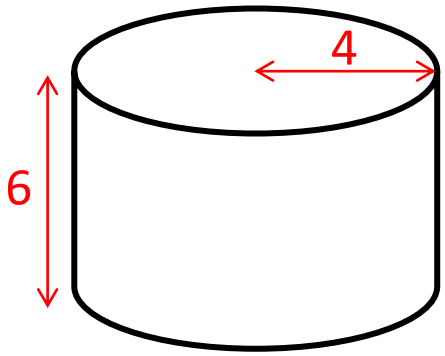
The Cylinder

The diagram shows a cylinder.

The measurements are given in centimetres.

What can you find from this information?



Example 3

Make x the subject of the formula $y = 4x - 7$.

$y = 4x - 7$

$4x - 7 = y$ [swap sides]

$4x = y + 7$ [add 7]

$x = \frac{y+7}{4}$ [divide by 4]

x is the subject of the formula as only x appears on the left hand side of the formula

Exercise 3

Make x the subject of the formula $y = 3 + 5x$.

___ out of 2

Quiz 4

What is the formula?

1) Area of a rectangle =	2) Circumference of a circle =	3) Volume of a cuboid =
4) Area of a triangle =	5) Area of a circle =	6) Volume of a prism =
7) Area of a parallelogram =	8) Area of a trapezium =	9) Volume of a cylinder =

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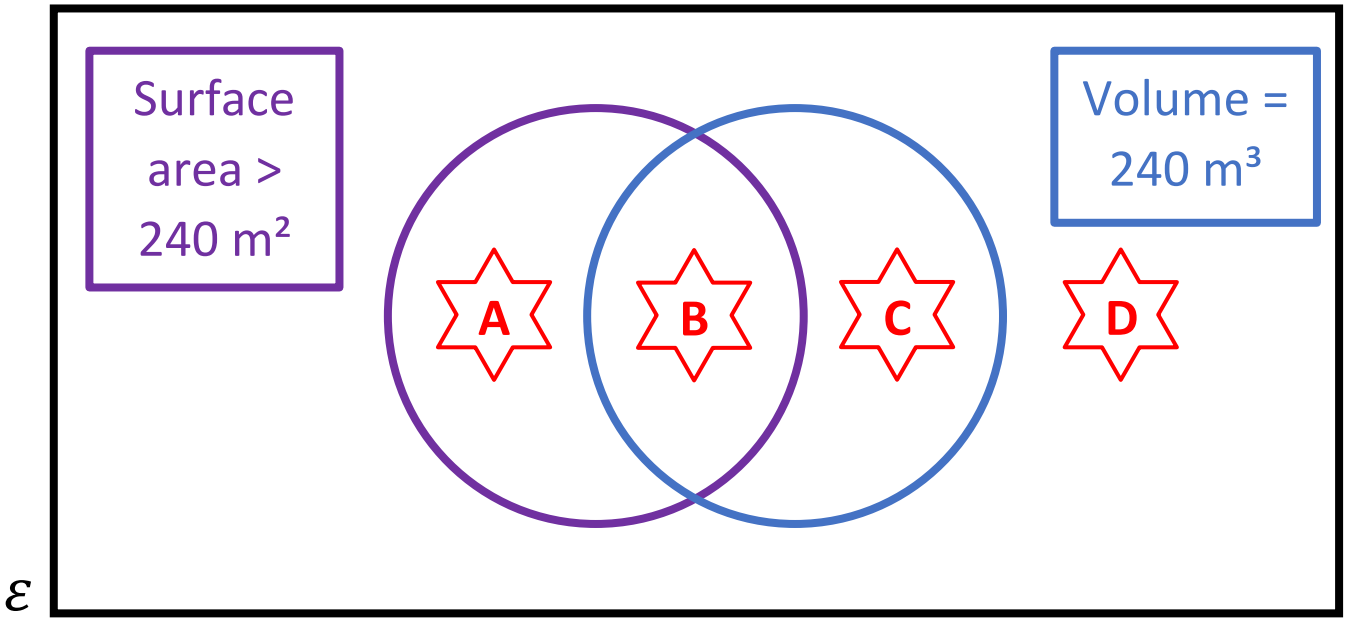
Venn Diagram Challenge 2



Write down the dimensions of a cuboid that could fit into each region. If you think a region is impossible to fill, explain why!

A

B

C

D

Example 4

Solve the following simultaneous equations.

$$3x + 7y = 46$$
$$2x + 6y = 36$$

$3x+7y=46$ ×2 → $6x+14y=92$

$2x+6y=36$ ×3 → − $6x+18y=108$

$-4y=-16$

$y=\frac{-16}{-4}$

$y=4$

METHOD A

$3x+7y=46$ ×6 → $18x+42y=276$

$2x+6y=36$ ×7 → − $14x+42y=252$

$4x=24$

$x=\frac{24}{4}$

$x=6$

METHOD B

Substitute $y=4$ into $2x+6y=36$

$2x+24=36$

$2x=12$

$x=6$

Exercise 4

Solve the following simultaneous equations.

$$4x + 3y = 49$$
$$2x + 4y = 32$$

___ out of 4

Quiz 5

Each of the following quantities has a specific number of dimensions. Give the number of dimensions for each quantity.

1) Perimeter of a rectangle	2) Capacity of a bottle of water	3) Circumference of a circle
4) Surface area of a cuboid	5) The distance between Eglwysbach and Llanrwst	6) The volume of a basketball
7) The size of a carpet	8) Area of a parallelogram	9) The amount of oil in a tank

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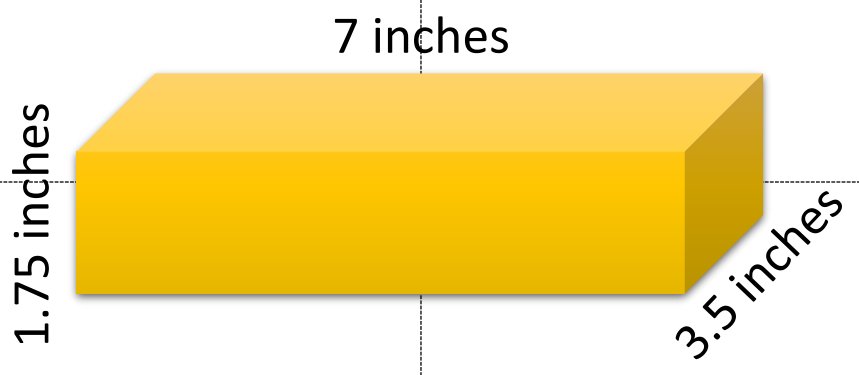
The Gold Bar

1) Calculate the volume of the gold bar.

2) Calculate the surface area of the gold bar.



3) The value of gold is £12,000 per cubic inch. What is the value of the gold bar above?

4) Calculate the length of the diagonal of the front of the gold bar.

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Evaluating the Workbook

Notes