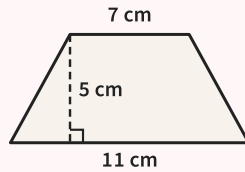


Have your formulae sheet in front of you. Find the formula you need, copy it from the sheet, then use it.

I do

Find the area of the trapezium.



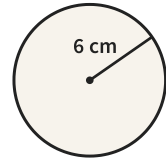
From your sheet $\text{Area} = \frac{1}{2}(a + b)h$

Substitute $\frac{1}{2}(7 + 11) \times 5$

Answer 45 cm^2

We do

Find the area of the circle.
Give your answer to 1 decimal place.



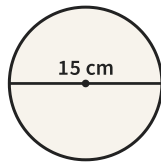
From your sheet $\text{Area} = \pi r^2$

Substitute $\pi \times 6^2$

Answer 113.1 cm^2

1

Find the circumference of the circle. Give your answer to 1 decimal place.



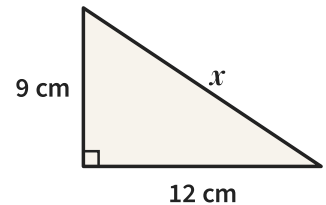
From your sheet $\text{Circumference} = \pi d$

Substitute $\pi \times 15$

Answer 47.1 cm

2

Find the length x .



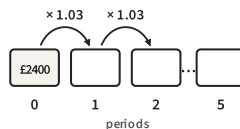
From your sheet $a^2 + b^2 = c^2$

Substitute $9^2 + 12^2 = x^2$

Answer 15 cm

3

Ravi invests £2400 at 3% compound interest per year. Find the total in the account after 5 years.



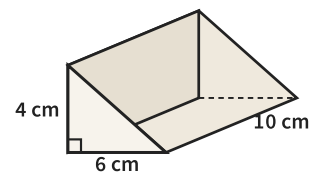
From your sheet $\text{Total} = P\left(1 + \frac{r}{100}\right)^n$

2400×1.03^5

Answer $\pounds 2782.26$

4

Find the volume of the triangular prism.



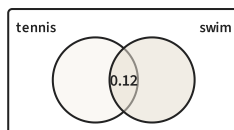
From your sheet $\text{area of cross section} \times \text{length}$

cross section: $\frac{1}{2} \times 6 \times 4 = 12 \text{ cm}^2$

Answer 120 cm^3

5

At a sports club, $P(\text{tennis}) = 0.45$, $P(\text{swim}) = 0.3$ and $P(\text{tennis and swim}) = 0.12$. Find $P(\text{tennis or swim})$.



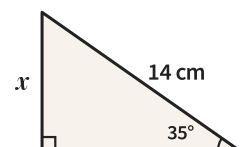
From your sheet $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$0.45 + 0.3 - 0.12$

Answer 0.63

6

Find the length x .
Give your answer to 1 decimal place.



From your sheet $\sin A = \frac{a}{c}$

$a = c \sin A$, with $c = 14$ and $A = 35^\circ$

$x = 14 \times \sin 35^\circ$

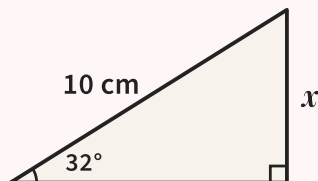
Answer 8.0 cm

Find the formula on your formulae sheet. Match its letters to the lengths, angles and amounts in the question.

I do

Find x to 1 decimal place.

Use the letters from your sheet.



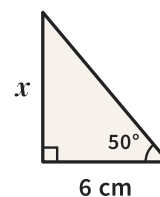
$a = x$ $b = \text{not given}$ $c = 10$

From your sheet $\sin A = \frac{a}{c}$

Answer 5.3 cm

We do

Find x to 1 decimal place.



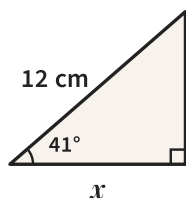
$a = x$ $b = 6$ $c = \text{not given}$

From your sheet $\tan A = \frac{a}{b}$

Answer 7.2 cm

1

Find x to 1 decimal place.



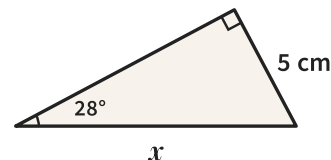
$a = \text{not given}$ $b = x$ $c = 12$

From your sheet $\cos A = \frac{b}{c}$

Answer 9.1 cm

2

Find x to 1 decimal place.



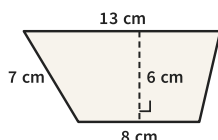
$a = 5$ $b = \text{not given}$ $c = x$

From your sheet $\sin A = \frac{a}{c}$

Answer 10.7 cm

3

Find the area of the trapezium.
Which length is h ?



From your sheet $\text{Area} = \frac{1}{2}(a + b)h$

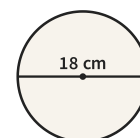
$a = 8$ $b = 13$ $h = 6, \text{ not } 7$

$\frac{1}{2}(8 + 13) \times 6$

Answer 63 cm^2

4

Find the area of the circle to 1 decimal place.



From your sheet $\text{Area} = \pi r^2$

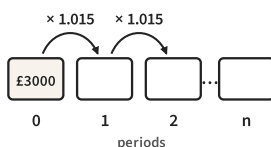
$d = 18$ $r = 9$

$\pi \times 9^2$

Answer 254.5 cm^2

5

£3000 earns 1.5% compound interest every 6 months.
Find the total after 3 years.



From your sheet $\text{Total} = P \left(1 + \frac{r}{100} \right)^n$

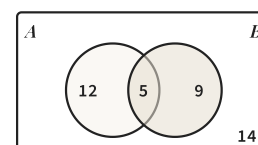
$P = 3000$ $r = 1.5$ $n = 6$

3000×1.015^6

Answer $£3280.33$

6

The Venn diagram shows 40 people. Find $P(A \text{ or } B)$.



From your sheet $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$P(A) = \frac{17}{40}$ $P(B) = \frac{14}{40}$ $P(A \text{ and } B) = \frac{5}{40}$

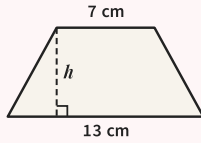
$\frac{17}{40} + \frac{14}{40} - \frac{5}{40}$

Answer $\frac{26}{40} = \frac{13}{20}$

Find the formula on your formulae sheet, substitute what you know, then rearrange to find the letter you need.

I do

The area of the trapezium is 60 cm^2 . Find the height h .



From your sheet $\text{Area} = \frac{1}{2}(a + b)h$

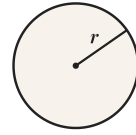
Substitute $60 = \frac{1}{2}(7 + 13) \times h$

Rearrange $60 = 10h$

Answer 6 cm

We do

A circle has an area of 50 cm^2 . Find its radius to 1 decimal place.



From your sheet $\text{Area} = \pi r^2$

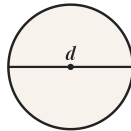
Substitute $50 = \pi r^2$

Rearrange $r^2 = \frac{50}{\pi}$

Answer 4.0 cm

1

A circle has a circumference of 40 cm . Find its diameter to 1 decimal place.



From your sheet $\text{Circumference} = \pi d$

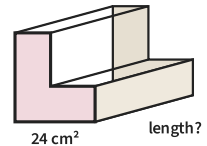
Substitute $40 = \pi d$

Rearrange $d = \frac{40}{\pi}$

Answer 12.7 cm

2

A prism has a volume of 360 cm^3 . Its cross section has an area of 24 cm^2 . Find its length.



From your sheet $\text{Volume} = \text{area of cross section} \times \text{length}$

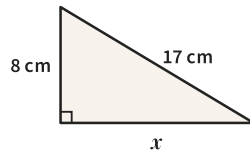
Substitute $360 = 24 \times \text{length}$

Rearrange $\text{length} = \frac{360}{24}$

Answer 15 cm

3

Find the length x .



From your sheet $a^2 + b^2 = c^2$

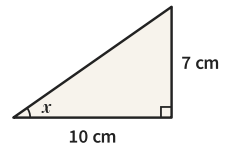
Substitute $8^2 + x^2 = 17^2$

$x^2 = 289 - 64 = 225$

Answer 15 cm

4

Find angle x to 1 decimal place.



From your sheet $\tan A = \frac{a}{b}$

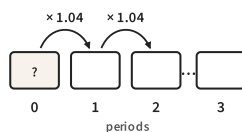
Substitute $\tan x = \frac{7}{10}$

$x = \tan^{-1}(0.7)$

Answer 35.0°

5

Mia invested some money at 4% compound interest per year. After 3 years she has £2249.73. How much did she invest?



From your sheet $\text{Total} = P \left(1 + \frac{r}{100} \right)^n$

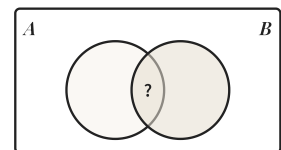
$2249.73 = P \times 1.04^3$

$P = 2249.73 \div 1.04^3$

Answer $\text{£}2000.00$

6

$P(A \text{ or } B) = 0.7$, $P(A) = 0.5$ and $P(B) = 0.4$. Find $P(A \text{ and } B)$.



From your sheet $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$0.7 = 0.5 + 0.4 - P(A \text{ and } B)$

$P(A \text{ and } B) = 0.9 - 0.7$

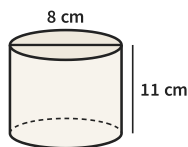
Answer 0.2



Use your formulae sheet for every question. Some questions need two formulae from it.

1

A tin is a cylinder with diameter 8 cm and height 11 cm. Find its volume to 1 decimal place.



From your sheet $\text{Area} = \pi r^2$, then $\times \text{length}$

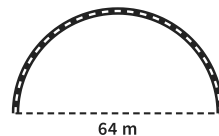
radius 4, cross section $\pi \times 4^2$

$\pi \times 16 \times 11$

Answer 552.9 cm^3

2

The bend of a running track is a semicircle with diameter 64 m. How long is the bend?



From your sheet $\text{Circumference} = \pi d$

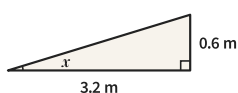
$\pi \times 64 = 201.06$

$\div 2$ for half a circle

Answer 100.5 m

3

A ramp rises 0.6 m over a horizontal distance of 3.2 m. Find the angle x it makes with the ground.



From your sheet $\tan A = \frac{a}{b}$

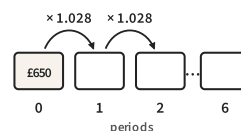
$\tan A = \frac{0.6}{3.2}$

$\tan^{-1}(0.1875)$

Answer 10.6°

4

Leah puts £650 in a savings account paying 2.8% compound interest per year. How much interest does she earn in 6 years?



From your sheet $\text{Total} = P \left(1 + \frac{r}{100} \right)^n$

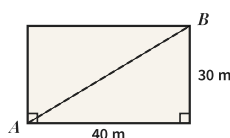
$\text{total} = 650 \times 1.028^6 = £767.14$

$\text{interest} = \text{total} - 650$

Answer $£117.14$

5

A field is 40 m by 30 m. How much shorter is it to walk straight from A to B than to walk along two edges?



From your sheet $a^2 + b^2 = c^2$

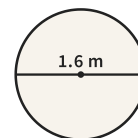
$x^2 = 40^2 + 30^2$

$x = 50$, then $70 - 50$

Answer 20 m

6

A round rug has a diameter of 1.6 m. Find its area to 2 decimal places.



From your sheet $\text{Area} = \pi r^2$

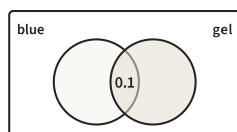
radius = 0.8 m

$\pi \times 0.8^2$

Answer 2.01 m^2

7

A pen is picked from a box at random. $P(\text{blue}) = 0.3$, $P(\text{gel}) = 0.45$, $P(\text{blue gel}) = 0.1$. Find $P(\text{blue or gel})$.



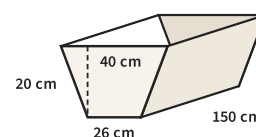
From your sheet $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$0.3 + 0.45 - 0.1$

Answer 0.65

8

A water trough is a prism. How many litres does it hold when full? $1000 \text{ cm}^3 = 1 \text{ litre}$



From your sheet $\text{Area} = \frac{1}{2}(a + b)h$, then volume

cross section $\frac{1}{2}(40 + 26) \times 20 = 660 \text{ cm}^2$

$660 \times 150 = 99\,000 \text{ cm}^3$

Answer 99 litres