

Write your name and the date clearly.

Name .....

Date .....

# Teach Me Maths

## GCSE (9–1) Mathematics

For Pearson Edexcel GCSE Mathematics (1MA1)

## Mock Set A

Time: 1 hour 30 minutes

### Mathematics

#### PAPER 3 (Calculator)

#### Foundation Tier

**You must have:** a ruler marked in centimetres and millimetres, a protractor, a pair of compasses, a pen, an HB or B pencil, an eraser, a calculator and the Formulae Sheet (last page). You may use tracing paper.

Total Marks

out of 80

### Instructions

- Use **black** ink or a ball-point pen.
- If you use a pencil for diagrams, sketches or graphs, it must be dark (HB or B).
- **Write your name and the date** in the box at the top of this page.
- Answer **all** questions.
- Write your answers in the spaces provided – you may not need all the space.
- You must **show all your working**.
- Diagrams are **NOT** drawn accurately, unless the question says they are.
- You may use a calculator.
- If your calculator does not have a  $\pi$  button, use 3.142 for  $\pi$  unless the question says otherwise.

### Information

- This paper is out of 80 marks.
- The marks for **each** question are shown in brackets – use them to judge how long to spend on each question.

### Advice

- Read each question carefully before you start your answer.
- Try to answer every question.
- If you have time at the end, check your answers.

*Practice paper written by Teach Me Maths in the style of Pearson Edexcel GCSE Mathematics (1MA1). Not an official Pearson Edexcel paper.*

**Turn over ►**

Answer **ALL** questions. Write your answers in the spaces provided.  
You must write down all the stages in your working.

- 1** Write the number sixty thousand four hundred and eight in figures.

.....  
(1)

**(Total for Question 1 is 1 mark)**

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- 2** Work out  $\frac{1}{7}$  of 91

.....  
(1)

**(Total for Question 2 is 1 mark)**

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- 3** Write these fractions in order of size.  
Start with the smallest fraction.

$$\frac{3}{5} \qquad \frac{1}{4} \qquad \frac{2}{3}$$

.....  
(1)

**(Total for Question 3 is 1 mark)**

---

4 Simplify  $8c - 3c + 2c$

.....  
(1)

(Total for Question 4 is 1 mark)

---

5 Write down two factors of 45

..... , .....  
(1)

(Total for Question 5 is 1 mark)

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6 (a) Solve  $4m = 52$

$m =$  .....  
(1)

(b) Solve  $15 - k = 6$

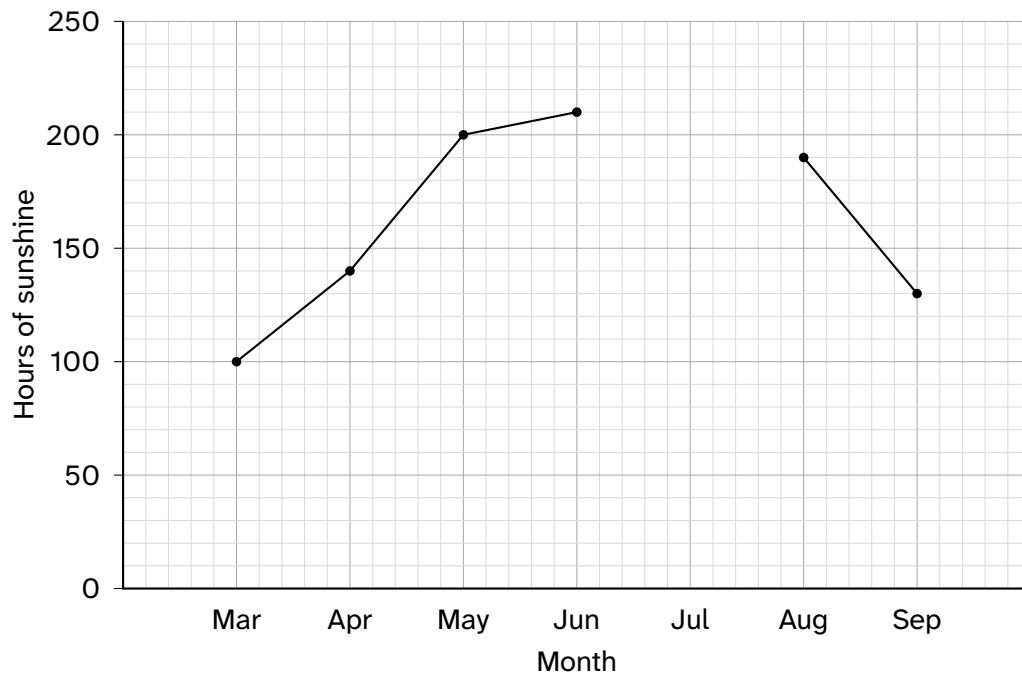
$k =$  .....  
(1)

(Total for Question 6 is 2 marks)

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- 7 The time series graph shows information about the number of hours of sunshine in a town in some months of 2025.

The graph for July is missing.



- (a) How many hours of sunshine were there in August?

..... hours  
(1)

- (b) In July there were 230 hours of sunshine.

Use this information to complete the time series graph.

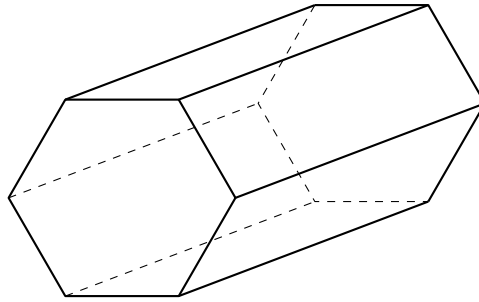
(1)

- (c) Between which two months was the greatest increase in the number of hours of sunshine?

..... and .....  
(1)

**(Total for Question 7 is 3 marks)**

**8** Here is a hexagonal prism.



Write down the number of edges of this hexagonal prism.

.....  
(1)

**(Total for Question 8 is 1 mark)**

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- 9 Here is part of a bus timetable from Ripon to Harrogate.

|                       |       |       |       |       |
|-----------------------|-------|-------|-------|-------|
| <b>Ripon</b>          | 06 50 | 07 25 | 08 00 | 08 30 |
| <b>Bishop Monkton</b> | 07 02 | 07 37 | –     | 08 42 |
| <b>Ripley</b>         | 07 14 | 07 49 | 08 15 | 08 54 |
| <b>Killinghall</b>    | 07 21 | 07 56 | 08 22 | 09 01 |
| <b>Harrogate</b>      | 07 35 | 08 12 | 08 36 | 09 16 |

- (a) How many minutes should the 07 25 bus from Ripon take to get to Harrogate?

..... minutes  
(1)

- (b) Leah lives in Bishop Monkton.

She works in Harrogate.

Leah has to be at work by 08 50

It takes her 12 minutes to walk from the bus stop in Harrogate to work.

What is the latest bus Leah can catch from Bishop Monkton?

You must show how you get your answer.

.....  
(3)

**(Total for Question 9 is 4 marks)**

**10** Here is the menu for a meal deal at a cafe.

| Wrap         | Drink            |
|--------------|------------------|
| Chicken (C)  | Orange juice (O) |
| Falafel (F)  | Smoothie (S)     |
| Halloumi (H) |                  |
| Tuna (T)     |                  |

Danny buys one wrap and one drink.

Write down all the possible combinations of one wrap and one drink Danny can buy.

(2)

**(Total for Question 10 is 2 marks)**

---

11 Here is a rectangle and a shape.

The length of the rectangle is 3 times its width.

The perimeter of the rectangle is 32 cm.

Three of these rectangles are put together, without overlapping, to make the shape.

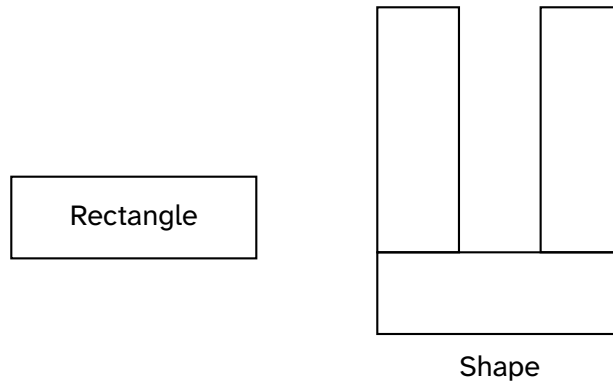


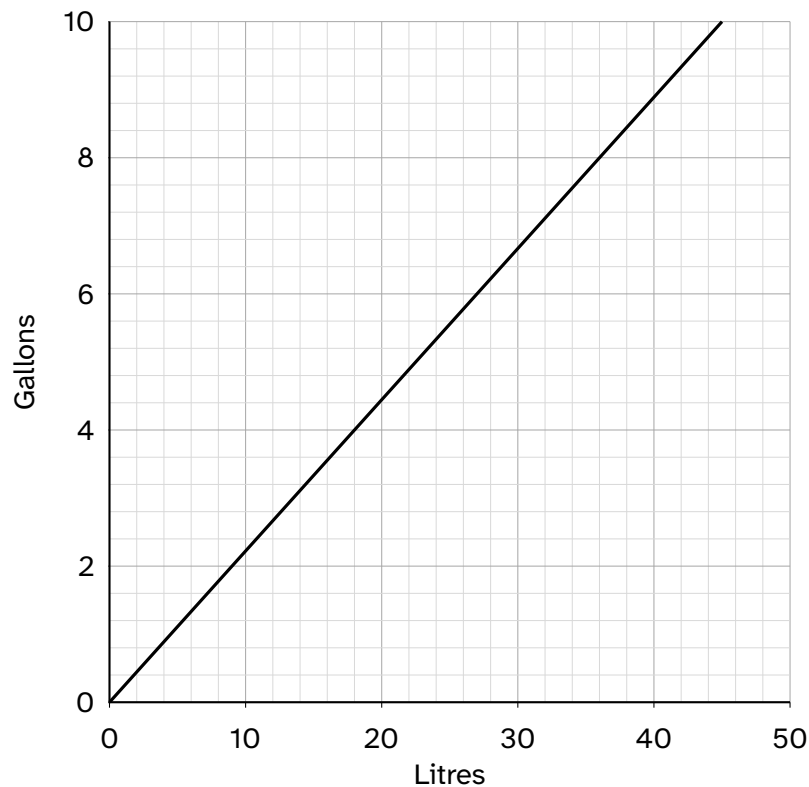
Diagram **NOT** accurately drawn

Work out the perimeter of the shape.

..... cm  
(3)

**(Total for Question 11 is 3 marks)**

**12** You can use this graph to change between litres and gallons.



(a) Change 36 litres to gallons.

..... gallons  
(1)

(b) The milk tank on Hannah's farm holds 630 litres of milk when it is full.  
How many gallons of milk does the tank hold when it is full?

..... gallons  
(2)

**(Total for Question 12 is 3 marks)**

**13** Freya, Kwame and Imran win some money in a quiz.

They share the money in the ratio 4:3:8

Imran gets £390 more than Kwame.

How much money does Freya get?

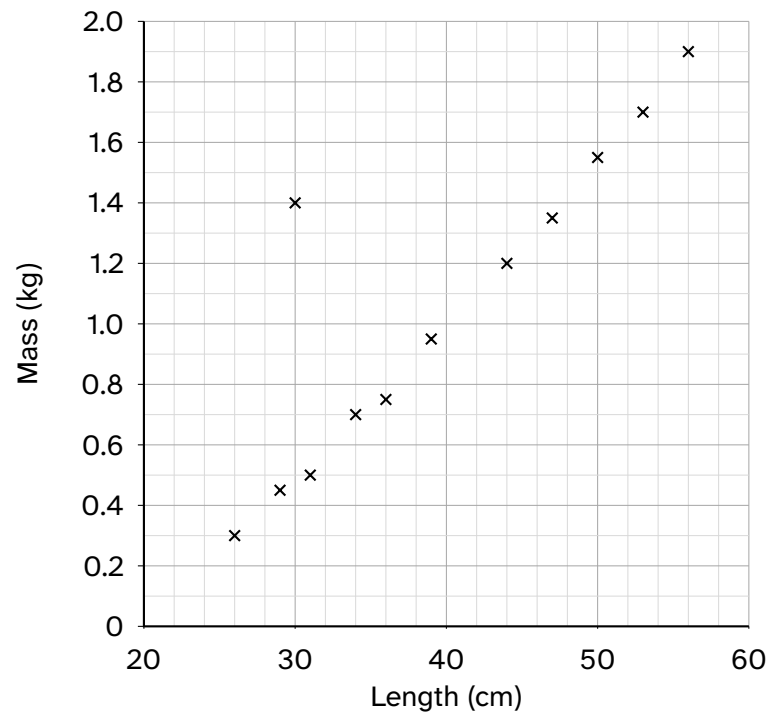
£ .....  
(3)

**(Total for Question 13 is 3 marks)**

---

**14** Mike went fishing.

The scatter graph shows information about the length and the mass of each of 12 fish he caught.



(a) Write down the type of correlation.

.....  
(1)

(b) One of the points is an outlier.

Write down the length and the mass of this fish.

..... cm ..... kg  
(1)

(c) Mike catches another fish.

The length of this fish is 42 cm.

Estimate the mass of this fish.

..... kg  
(2)

**(Total for Question 14 is 4 marks)**

**15** The scale of a map is 1:50 000

(a) On the map, the length of a walking route is 13.6 cm.

Work out the real length of the walking route.

Give your answer in kilometres.

..... km  
(2)

(b) The real distance between two car parks is 3.8 km.

Work out the distance between the car parks on the map.

..... cm  
(1)

**(Total for Question 15 is 3 marks)**

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**16** At 6 am, the temperature in a mountain village was  $-7^{\circ}\text{C}$ .

At 2 pm, the temperature in the village was  $5^{\circ}\text{C}$ .

Work out the rise in temperature from 6 am to 2 pm.

.....  $^{\circ}\text{C}$   
(1)

**(Total for Question 16 is 1 mark)**

---

- 17** Ollie wants to buy an electric bike.  
The cash price of the bike is £1450  
Ollie can also buy the bike on credit.

**Credit terms**

deposit: 15% of the cash price  
then 12 monthly payments of £115

Ollie says,

“Buying the bike on credit costs more than 10% extra.”

Is Ollie correct?

You must show how you get your answer.

(4)

**(Total for Question 17 is 4 marks)**

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**18** Write these numbers in order of size.

Start with the smallest number.

0.425       $\frac{3}{7}$       43%      0.42

.....  
(2)

**(Total for Question 18 is 2 marks)**

---

**19** Amir, Bea, Cal and Dan are the 4 swimmers in a relay team.

Each swimmer swims one length of the pool.

The table shows the times, in seconds, for three of the swimmers.

| Swimmer        | Amir | Bea  | Cal  |
|----------------|------|------|------|
| Time (seconds) | 31.6 | 33.1 | 32.9 |

The mean time for the 4 swimmers is 32.45 seconds.

(a) Work out Dan's time.

..... seconds  
(3)

(b) The coach then finds that Bea's time was written down wrongly.

Bea's correct time is 33.5 seconds.

Dan's time does not change.

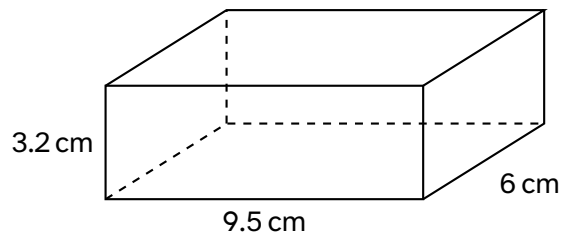
What effect does this have on the mean time of the 4 swimmers?

.....  
.....  
(1)

**(Total for Question 19 is 4 marks)**

**20** A doorstep is a solid cuboid made of brass.

Brass has a density of  $8.4 \text{ g/cm}^3$



*Diagram **NOT** accurately drawn*

Petra says,

“The doorstep weighs less than 1.5 kg.”

Is Petra correct?

You must show how you get your answer.

(3)

**(Total for Question 20 is 3 marks)**

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**21** Here are the first five terms of an arithmetic sequence.

$-9$        $-5$        $-1$        $3$        $7$

(a) Find an expression, in terms of  $n$ , for the  $n$ th term of this sequence.

.....  
(2)

(b) Is 81 a term in this sequence?

You must give a reason for your answer.

.....  
.....

(2)

**(Total for Question 21 is 4 marks)**

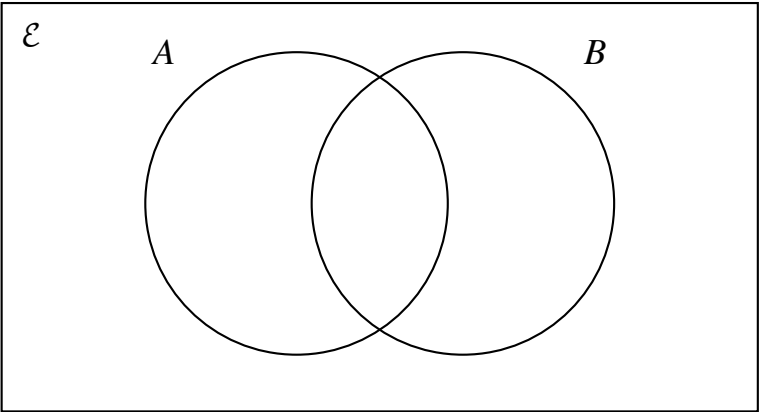
.....

**22**  $\mathcal{E} = \{\text{whole numbers from 1 to 18}\}$

$A = \{\text{multiples of 3}\}$

$B = \{\text{factors of 24}\}$

(a) Complete the Venn diagram for this information.



(3)

(b) One of the numbers in  $\mathcal{E}$  is chosen at random.

Find the probability that this number is in the set  $A \cap B$

.....  
(2)

**(Total for Question 22 is 5 marks)**

**23** Kofi runs a cafe.

He buys paper cups and lids for the cups.

| Cups                            | Lids                            |
|---------------------------------|---------------------------------|
| pack of 40 cups<br>£3.20 a pack | pack of 75 lids<br>£4.50 a pack |

Kofi has £200 to spend on cups and lids.

He wants to buy exactly the same number of cups and lids.

Work out the greatest number of cups Kofi can buy.

You must show all your working.

..... cups  
(5)

**(Total for Question 23 is 5 marks)**

---

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

.....  
(2)

**(Total for Question 24 is 2 marks)**

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**25** Triangle  $ABC$  and triangle  $DEF$  are similar.

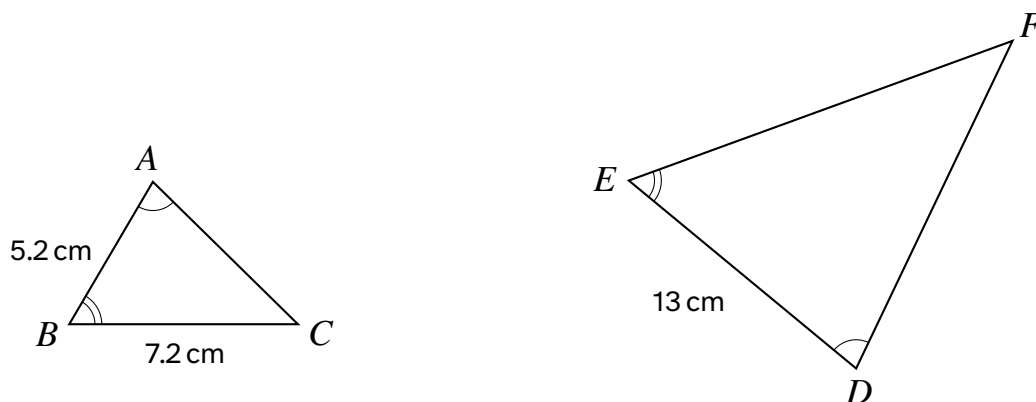


Diagram **NOT** accurately drawn

The perimeter of triangle  $DEF$  is 47 cm.

Work out the length of  $AC$ .

..... cm  
(4)

**(Total for Question 25 is 4 marks)**

- 26** Eleni puts £3200 into a savings account.  
The account pays simple interest.  
Eleni does not pay in or take out any money.  
After 4 years, there is £3616 in the account.  
Work out the rate of simple interest per year.

..... %  
(3)

**(Total for Question 26 is 3 marks)**

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**27** The diagram shows a shape.

The shape is a rectangle with a square cut out of one corner.

All measurements are in centimetres.

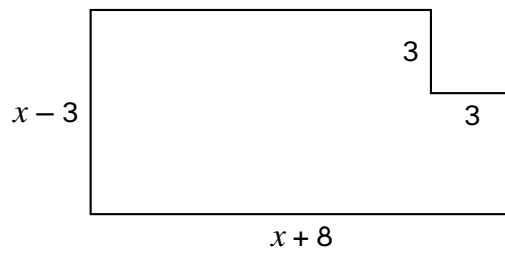


Diagram **NOT** accurately drawn

The area of the shape is  $A \text{ cm}^2$

Show that  $A = x^2 + 5x - 33$

(3)

(Total for Question 27 is 3 marks)

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**28** Josh plays a hoopla game at a fair.

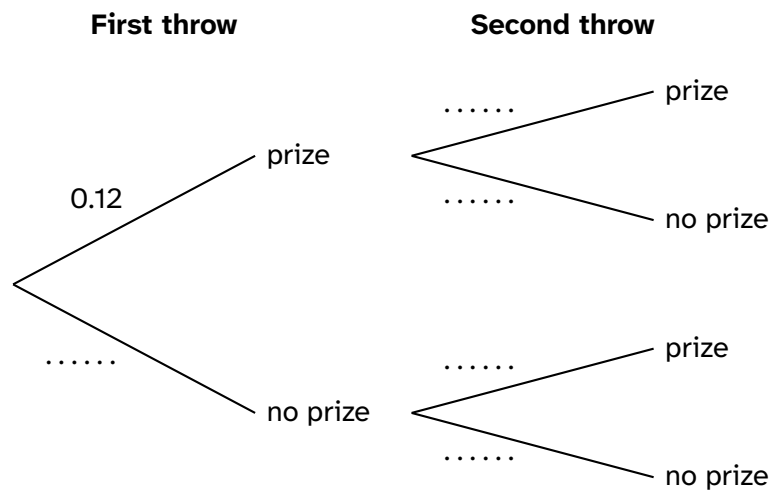
He throws a ring at some prizes.

The probability that he wins a prize with a throw is 0.12

Josh has two throws.

The result of his first throw does not affect the result of his second throw.

(a) Complete the probability tree diagram.



(2)

(b) Josh says,

“The probability that I win at least one prize with my two throws is 0.24”

Is Josh correct?

You must show how you get your answer.

(2)

**(Total for Question 28 is 4 marks)**

**29** Solve the simultaneous equations

$$5x + 2y = 14$$

$$3x - 4y = 24$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots$$

(3)

**(Total for Question 29 is 3 marks)**

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**TOTAL FOR PAPER IS 80 MARKS**

# Formulae Sheet

For Pearson Edexcel GCSE Mathematics (1MA1) • Foundation Tier

## Perimeter, area and volume

Where  $a$  and  $b$  are the lengths of the parallel sides and  $h$  is their perpendicular separation:

$$\text{Area of a trapezium} = \frac{1}{2}(a + b)h$$

Volume of a prism = area of cross section  $\times$  length

Where  $r$  is the radius and  $d$  is the diameter:

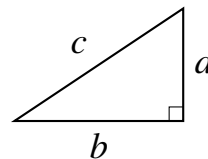
$$\text{Circumference of a circle} = 2\pi r = \pi d$$

$$\text{Area of a circle} = \pi r^2$$

## Pythagoras' Theorem and Trigonometry

In any right-angled triangle where  $a$ ,  $b$  and  $c$  are the lengths of the sides and  $c$  is the hypotenuse:

$$a^2 + b^2 = c^2$$

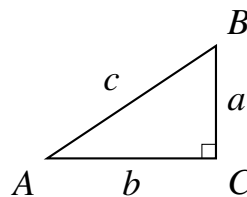


In any right-angled triangle  $ABC$  where  $a$ ,  $b$  and  $c$  are the lengths of the sides and  $c$  is the hypotenuse:

$$\sin A = \frac{a}{c}$$

$$\cos A = \frac{b}{c}$$

$$\tan A = \frac{a}{b}$$



## Compound Interest

Where  $P$  is the principal amount,  $r$  is the interest rate over a given period and  $n$  is the number of times that the interest is compounded:

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

## Probability

Where  $P(A)$  is the probability of outcome  $A$  and  $P(B)$  is the probability of outcome  $B$ :

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