

Please check the examination details below before entering your candidate information

Candidate surname		Other names	
Centre Number		Candidate Number	

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Wednesday 10 June 2026

Morning (Time: 1 hour 30 minutes)	Paper reference	1MA1/3H
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Mathematics
PAPER 3 (Calculator)
Higher Tier



You must have: Ruler graduated in centimetres and millimetres, protractor, pair of compasses, pen, HB or B pencil, eraser, calculator, Formulae Sheet (enclosed). Tracing paper may be used.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You must **show all your working**.
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- **Calculators may be used.**
- If your calculator does not have a π button, take the value of π to be 3.142 unless the question instructs otherwise.

Information

- The total mark for this paper is 80
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

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Answer ALL questions.

Write your answers in the spaces provided.

You must write down all the stages in your working.

1 (a) Work out the value of $1.4^3 + \frac{\sqrt{43.56} - 3.1}{1.9 \times 1.7}$

Write down all the numbers on your calculator display.

.....
(2)

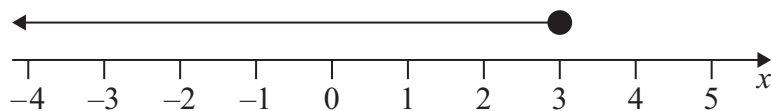
(b) Write your answer to part (a) correct to 3 significant figures.

.....
(1)

(Total for Question 1 is 3 marks)

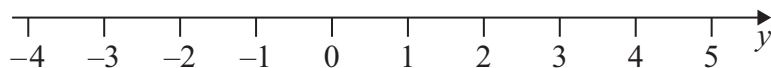


- 2 (a) Write down the inequality shown on the number line below.



(1)

- (b) On the number line below, show the inequality $-2 \leq y < 4$



(2)

(Total for Question 2 is 3 marks)



3 (a) Find the value of the reciprocal of 0.2

.....
(1)

(b) Write $(5^{30})^7$ as a power of 5

.....
(1)

(c) Write $\frac{2^{90}}{2^{10} \times 2^{20}}$ as a power of 2

.....
(2)

(Total for Question 3 is 4 marks)



- 4 50 people did a sponsored walk.

The table shows information about the amounts of money they collected.

Amount of money (£ a)	Frequency
$0 < a \leq 10$	8
$10 < a \leq 20$	16
$20 < a \leq 30$	11
$30 < a \leq 40$	8
$40 < a \leq 50$	7

Calculate an estimate for the mean amount of money.

£.....

(Total for Question 4 is 3 marks)



- 5 A solid metal bar has a volume of 80 cm^3
The density of the metal is 4 g/cm^3

A solid sphere is made from wood.
The density of the wood is 0.8 g/cm^3

$$\text{mass of metal bar} = 2 \times \text{mass of sphere}$$

Work out the volume of the sphere.

..... cm^3

(Total for Question 5 is 3 marks)



6 (a) Change 75 cm^3 to mm^3

..... mm^3
(1)

(b) Show that a speed of 450 kilometres per hour is equal to a speed of 125 metres per second.

(2)

(Total for Question 6 is 3 marks)

7 Lethna buys a car.

She gets a discount of 20% off the price of the car.

Lethna pays £7600 for the car.

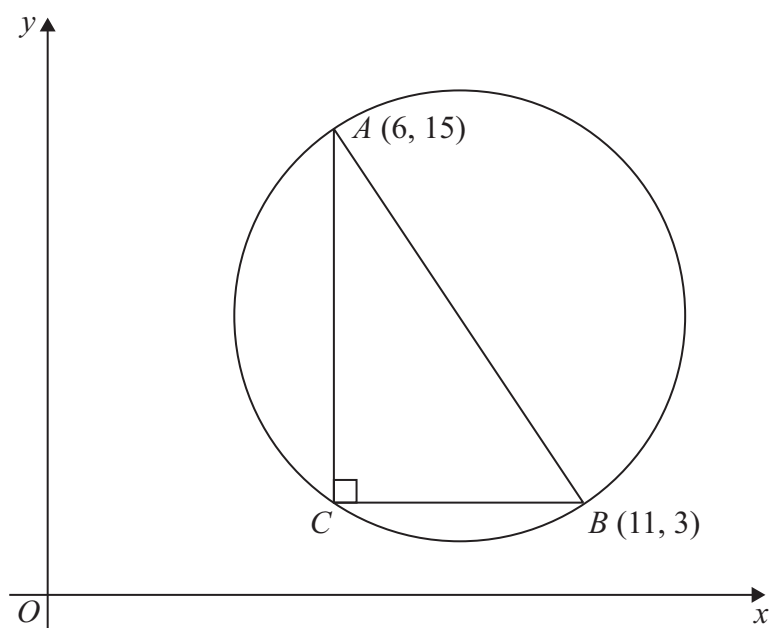
Work out the price of the car before the discount.

£.....

(Total for Question 7 is 2 marks)



- 8 The points A , B and C lie on a circle.
 ABC is a right-angled triangle.



The coordinates of A are $(6, 15)$

The coordinates of B are $(11, 3)$

AB is a diameter of the circle.

Work out the circumference of the circle.

Give your answer correct to 3 significant figures.

(Total for Question 8 is 5 marks)

9 (a) Simplify $\frac{4(x-2)}{(x-2)^2}$

.....
(1)

(b) Make F the subject of the formula $C = \frac{5(F-32)}{9}$

.....
(3)

(Total for Question 9 is 4 marks)



10 The cumulative frequency table shows information about the speeds of 80 cars.

Speed (s km/h)	Cumulative frequency
$70 < s \leq 80$	10
$70 < s \leq 90$	40
$70 < s \leq 100$	60
$70 < s \leq 110$	74
$70 < s \leq 120$	80

Chris says,

“50 of the cars have a speed less than or equal to 90 km/h because $10 + 40 = 50$ ”

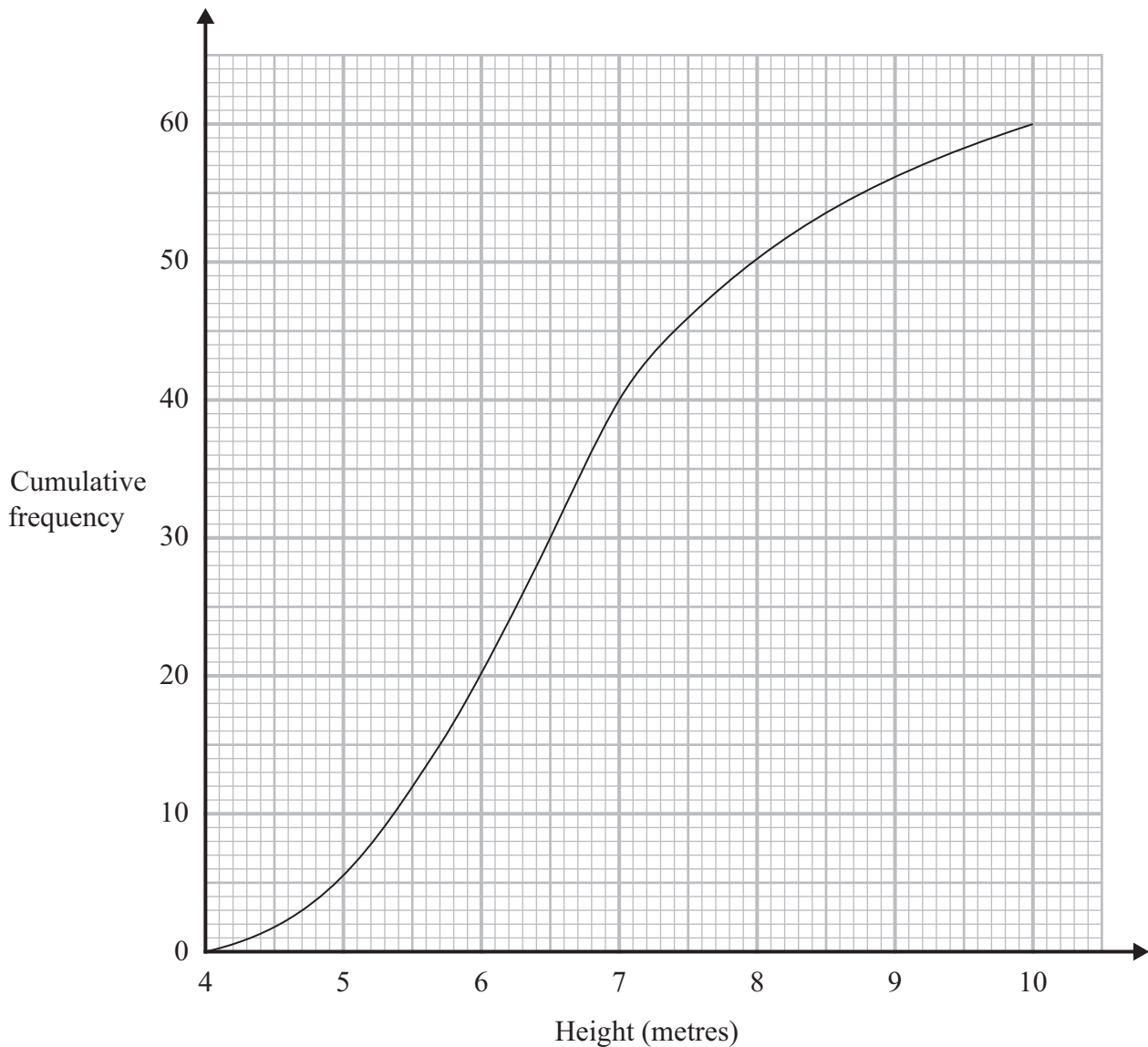
(a) Is Chris correct?

Give a reason for your answer.

(1)



The cumulative frequency graph shows information about the heights of 60 trees.



(b) Use the graph to find an estimate for the interquartile range of the heights.

..... metres
(2)

(c) Use the graph to find an estimate for the number of trees with a height greater than 7 metres.

.....
(2)

(Total for Question 10 is 5 marks)



11 $W = \frac{m^2}{p}$

The value of m decreases by 40%

The value of p increases by 50%

Work out the percentage decrease in the value of W .

..... %

(Total for Question 11 is 3 marks)



12 h is inversely proportional to g .

(a) Complete the table of values.

g	2	5	
h	150		10

(2)

p is directly proportional to r^3

$p = 13.5$ when $r = n$

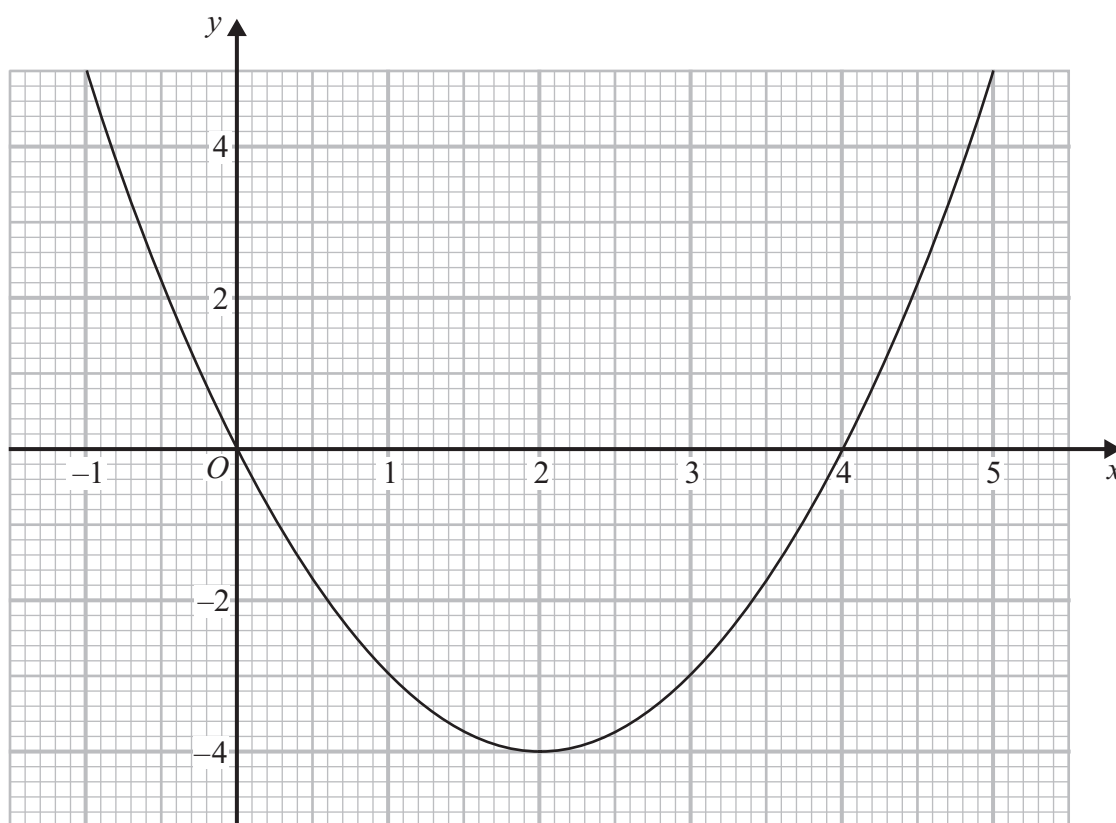
(b) Show that $p = 108$ when $r = 2n$

(3)

(Total for Question 12 is 5 marks)



13 Here is the graph of $y = x^2 - 4x$ for values of x from -1 to 5



By drawing a suitable straight line, use the graph to find estimates for the solutions of $x^2 - 3x - 2 = 0$

(Total for Question 13 is 3 marks)



14 $\frac{1}{\sqrt{20}} = 2^x \times 5^y$

Find the value of x and the value of y .

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

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

(Total for Question 14 is 3 marks)



15 a , b and c are three consecutive multiples of 4, where $a < b < c$

Prove algebraically that the product of a and c is always 16 less than the square of b

(Total for Question 15 is 3 marks)

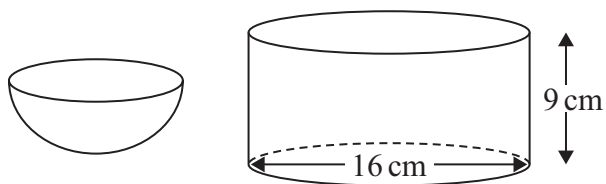


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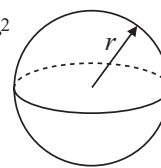
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16 The diagram shows a solid hemisphere and a solid cylinder.



Surface area of sphere = $4\pi r^2$

Volume of sphere = $\frac{4}{3}\pi r^3$



The cylinder has a diameter of 16 cm.

The cylinder has a height of 9 cm.

volume of hemisphere : volume of cylinder = 1 : 4

Work out the total surface area of the hemisphere.

Give your answer as a multiple of π .

..... cm^2

(Total for Question 16 is 5 marks)



17 $E = \frac{a - c}{m}$

$a = 35$ correct to 2 significant figures.

$c = 2.3$ correct to 2 significant figures.

$m = 12.6$ correct to 3 significant figures.

Work out the lower bound for the value of E .

Give your answer correct to 3 significant figures.

You must show all your working.

(Total for Question 17 is 3 marks)

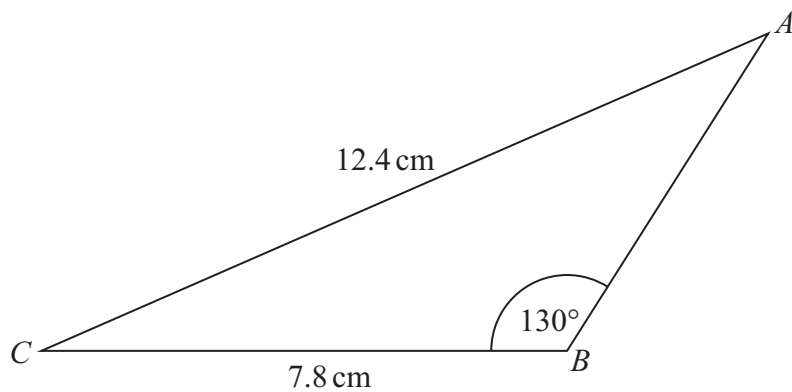


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18 The diagram shows triangle ABC .



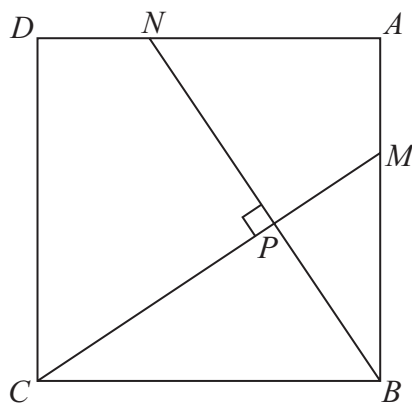
Work out the area of triangle ABC .
Give your answer correct to 3 significant figures.

..... cm^2

(Total for Question 18 is 4 marks)



19 $ABCD$ is a square.



M is a point on AB .

N is a point on DA .

CPM and BPN are perpendicular lines.

Prove that $BM = AN$.

(Total for Question 19 is 4 marks)



20 The straight line **L** has equation $y = 2x - 2$

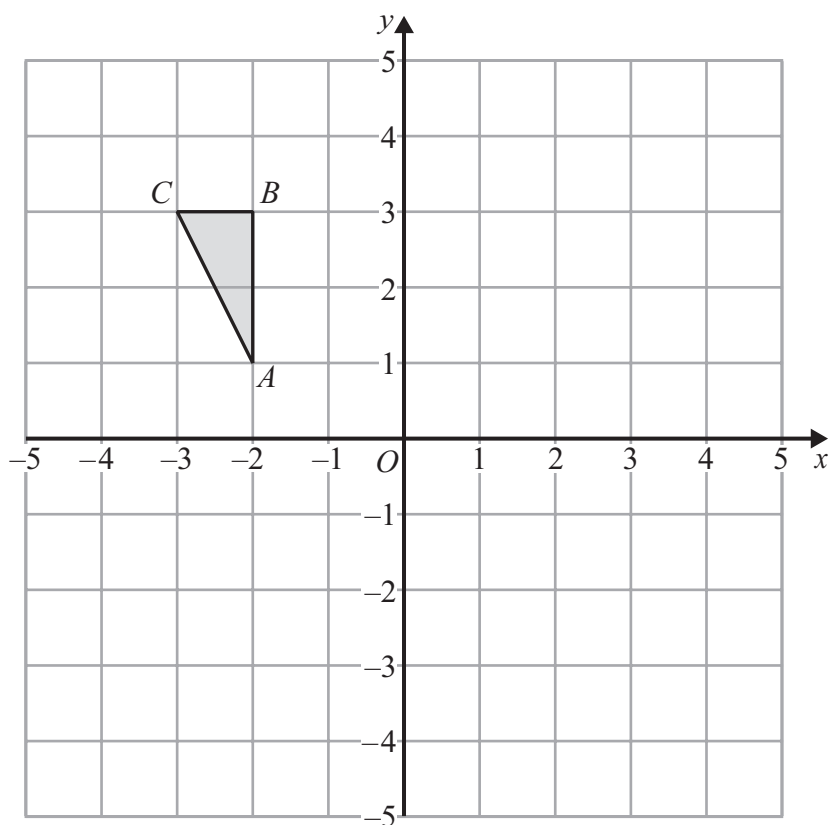
The straight line **M** has equation $2x + 3y = 18$

L and **M** intersect at the point *A*.

Find an equation of the straight line that is perpendicular to **M** and passes through *A*.

(Total for Question 20 is 5 marks)





Triangle ABC is transformed by a combination of two single transformations so that

A and B are invariant

C is **not** invariant

The first transformation is

a translation by the vector $\begin{pmatrix} k \\ 0 \end{pmatrix}$ where k is an integer and $k \neq 0$

Describe fully the second transformation.

(Total for Question 21 is 2 marks)



- 22 There are only red sweets and yellow sweets in a bag.
There are 5 red sweets in the bag.

Eli is going to take at random a sweet from the bag and eat it.
He will then take at random another sweet from the bag.

The probability that Eli will take two yellow sweets is $\frac{3}{7}$

Work out the probability that Eli will take two red sweets.

(Total for Question 22 is 5 marks)

TOTAL FOR PAPER IS 80 MARKS



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Pearson Edexcel GCSE (9–1) Mathematics

Wednesday 10 June 2026 – Morning

Paper
reference

1MA1/3H

Mathematics

PAPER 3 (Calculator)

Higher Tier

Formulae Sheet

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Higher Tier Formulae Sheet

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:

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

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

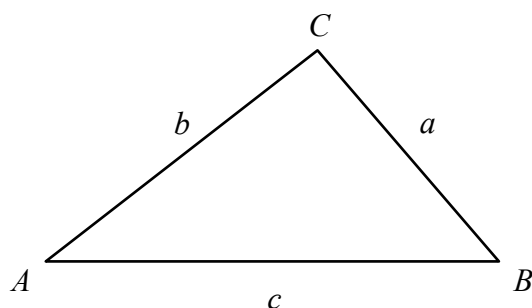
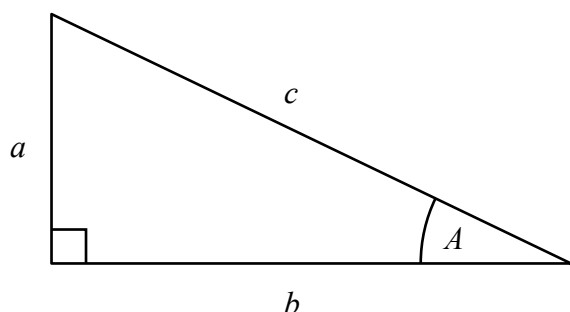
Quadratic formula

The solution of $ax^2 + bx + c = 0$

where $a \neq 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Pythagoras' Theorem and Trigonometry



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

$$\sin A = \frac{a}{c} \quad \cos A = \frac{b}{c} \quad \tan A = \frac{a}{b}$$

In any triangle ABC where a , b and c are the length of the sides:

$$\text{sine rule: } \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\text{cosine rule: } a^2 = b^2 + c^2 - 2bc \cos A$$

$$\text{Area of triangle} = \frac{1}{2} a b \sin C$$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is 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 :

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

$$P(A \text{ and } B) = P(A \text{ given } B) P(B)$$

END OF EXAM AID

