The year 5 entrance test is based on IGCSE paper type questions, a selection of which can be found below.
All formulas will be provided. A calculator is required. The entrance exam is normally 90 minutes.

1 euro = 120 yen
£1 = 1.2 euros

Change £50 to yen.

..... yen

(a) Work out the value of $\dfrac{451.4}{14.1 + 10.3}$

.....

(2)

(b) Work out the value of $\sqrt{7.8^2 - 7.2^2}$

.....

(2)

(a) Factorise $14x - 35$

.....

(1)

(b) Expand and simplify $3(2c - 5) - 2(c - 4)$

.....

(2)

(c) Simplify $(4e^3)^2$

.....

(2)

(d) Expand and simplify $(a + 5)(2a - 1)$

.....

(2)

The diagram shows a shape with one line of symmetry.

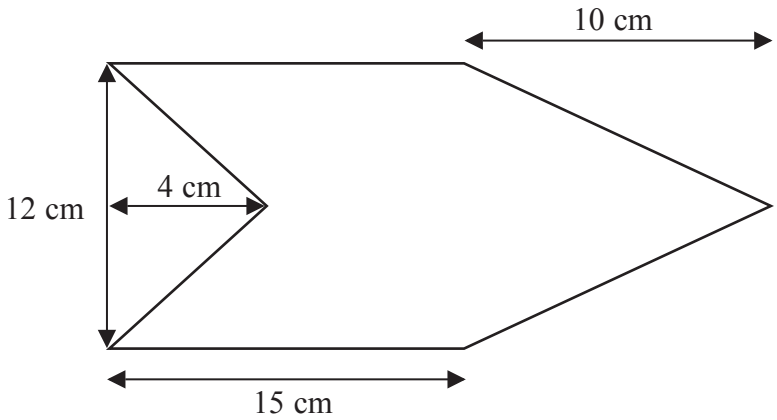


Diagram **NOT** accurately drawn

Work out the area of the shape.

..... cm^2

A jar contains coloured beads.
Ajit takes at random a bead from the jar.
The probability that the bead is yellow is 0.08
The probability that the bead is pink is 0.1
The probability that the bead is blue is 0.25

(a) (i) Find the probability that the bead is yellow or blue.

.....

(ii) Find the probability that the bead is neither yellow nor pink.

.....

(4)

Ajit replaces the first bead in the jar.
He then takes at random a second bead from the jar.

(b) Find the probability that the first bead is yellow and the second bead is blue.

.....

(2)

A second jar contains 100 coloured beads.
20 of these beads are brown.

Ajit takes at random a bead from the jar.
He records the colour of the bead and then returns the bead to the jar.
He does this 60 times.

(c) Work out an estimate for the number of times Ajit records a brown bead.

.....

(2)

Solve $4(5y - 1) = 3(6y + 7)$
Show clear algebraic working.

$y =$ .....

Eloy's height was 125 cm when his age was 7 years.
His height was 153 cm when his age was 12 years.

(a) Work out the percentage increase in Eloy's height between the ages of 7 and 12 years.

.....%

(3)

Eloy's height at the age of 12 years was 85% of his height at the age of 20 years.

(b) Work out Eloy's height when his age was 20 years.

..... cm

(3)

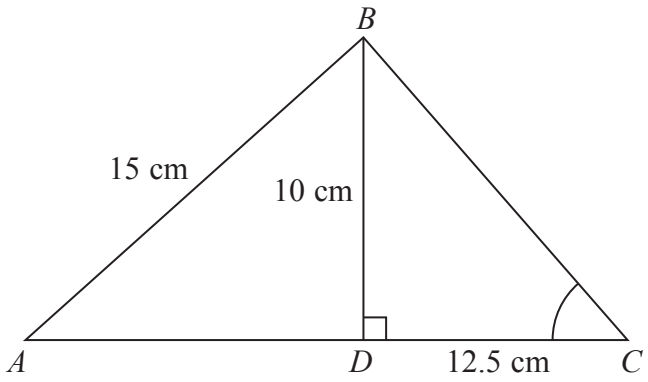


Diagram **NOT** accurately drawn

ABC is a triangle.
The point *D* lies on *AC*.
Angle *BDC* = 90°
BD = 10 cm, *AB* = 15 cm and *DC* = 12.5 cm.

(a) Calculate the length of *AD*.
Give your answer correct to 3 significant figures.

..... cm

(3)

(b) Calculate the size of angle *BCD*.
Give your answer correct to 1 decimal place.

..... °

(3)

(a) Find the gradient of the line with equation $3y - 2x = 6$

.....

(2)

(b) Find an equation of the line with gradient -3 that passes through the point $(2, 5)$.

.....

(2)

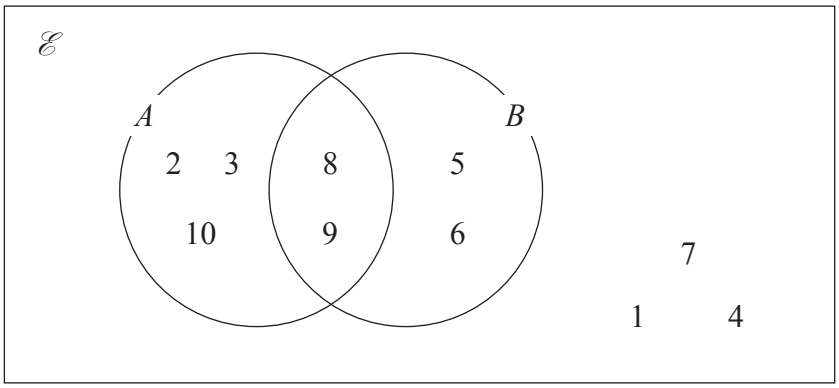
Solve the simultaneous equations

$$5y - 4x = 8$$
$$y + x = 7$$

Show clear algebraic working.

$x =$ .....

$y =$ .....



The Venn diagram shows all of the elements in sets A, B and $\mathscr{E}$.

(a) Write down the elements in A'

.....

(1)

(b) Find $n(A \cap B)'$

.....

(1)

(c) Find the elements in $(A \cap B) \cup (A \cup B)'$

.....

(1)

$A \cap C = \varnothing$
$B \cup C = \{5, 6, 7, 8, 9\}$
$n(C) = 3$

(d) Write down the elements in C.

.....

(1)

$f: x \mapsto 2x^2 + 1 \quad g: x \mapsto \dfrac{2x}{x-1}$ where $x \neq 1$

(a) Express the composite function gf in the form $gf: x \mapsto \ldots$
Give your answer as simply as possible.

$gf: x \mapsto$ .....

(2)

(b) Express the inverse function g^{-1} in the form $g^{-1}: x \mapsto \ldots$

$g^{-1}: x \mapsto$ .....

(3)

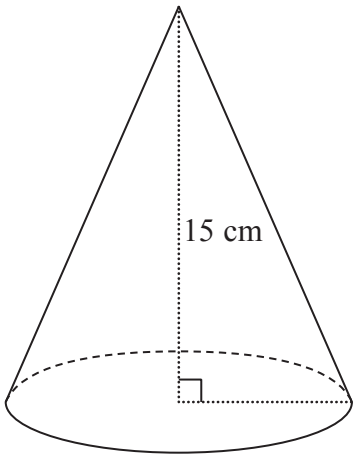


Diagram **NOT** accurately drawn

A solid cone has a height of 15 cm.
The volume of the cone is 320π cm^3

Work out the curved surface area of the cone.
Give your answer correct to 3 significant figures.

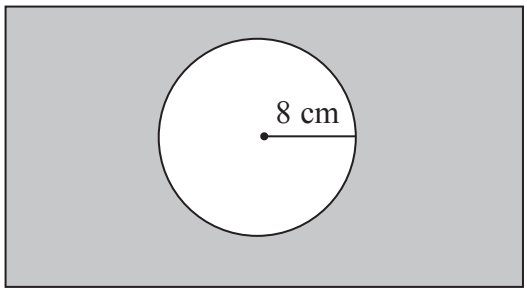
..... cm^2

Becky counted the number of matches in each of 50 boxes.
The table shows information about her results.

Number of matches	Frequency
45	3
46	7
47	12
48	23
49	4
50	1

Work out the mean number of matches.

Diagram **NOT** accurately drawn



The diagram shows a circle inside a rectangle.

Work out the area of the shaded region.
Give your answer correct to 3 significant figures.

..... cm^2

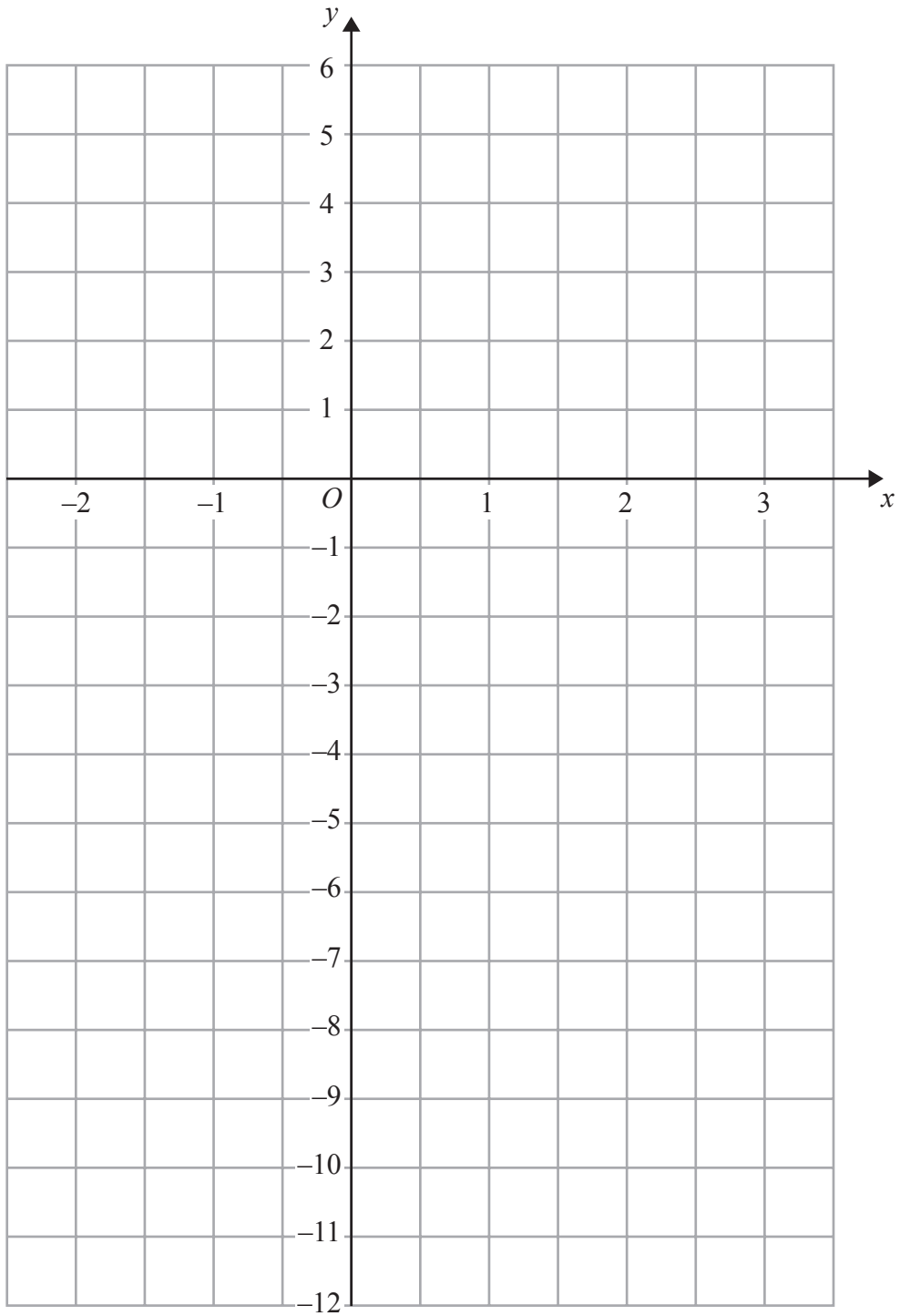
A bag contains only red counters, blue counters and yellow counters.
The number of red counters in the bag is the same as the number of blue counters.

Mikhail takes at random a counter from the bag.
The probability that the counter is yellow is 0.3

Work out the probability that the counter Mikhail takes is red.

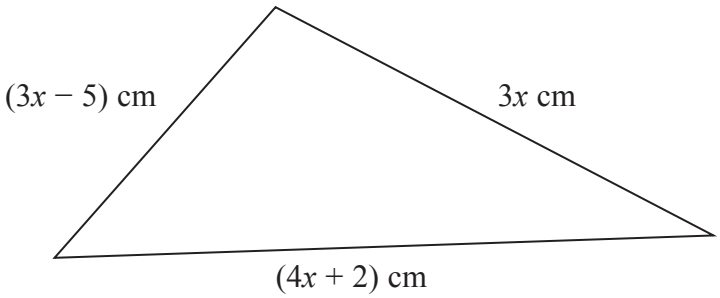
.....

On the grid, draw the graph of $y = 3x - 4$ for values of x from –2 to 3



The diagram shows a triangle.

Diagram **NOT** accurately drawn



The lengths of the sides of the triangle are $3x$ cm, $(3x - 5)$ cm and $(4x + 2)$ cm.

The perimeter of the triangle is 62 cm.

Work out the value of x.
Show clear algebraic working.

$x =$ .....

(a) Factorise $c^2 - 5c$

.....

(2)

(b) Simplify $d^5 \times d^7$

.....

(1)

(c) Factorise $x^2 + x - 30$

.....

(2)

(d) Make b the subject of $P = \frac{1}{2}ab^2$

$b =$ .....

(2)

(e) Solve $\frac{2x+1}{3} + \frac{x-5}{2} = 4$

Show clear algebraic working.

$x =$ .....

(4)

(a) Write 0.000076 in standard form.

.....

(1)

The area covered by the Pacific Ocean is 1.6×10^8 km^2
The area covered by the Arctic Ocean is 1.4×10^7 km^2

(b) Write 1.6×10^8 as an ordinary number.

.....

(1)

The area covered by the Pacific Ocean is k times the area covered by the Arctic Ocean.

(c) Find, correct to the nearest integer, the value of k.

$k =$ .....

(2)

Kwo invests HK$ 40000 for 3 years at 2.5% per year compound interest.
Work out the value of the investment at the end of 3 years.

HK$.....

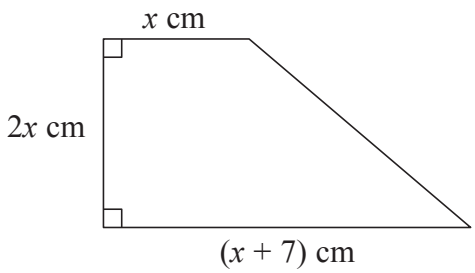


Diagram **NOT** accurately drawn

The diagram shows a trapezium.
The trapezium has an area of 17 cm^2

(a) Show that $2x^2 + 7x - 17 = 0$

(3)

(b) Work out the value of x.
Give your answer correct to 3 significant figures.
Show your working clearly.

$x =$ .....

(3)

The diagram shows a cylinder and a sphere.

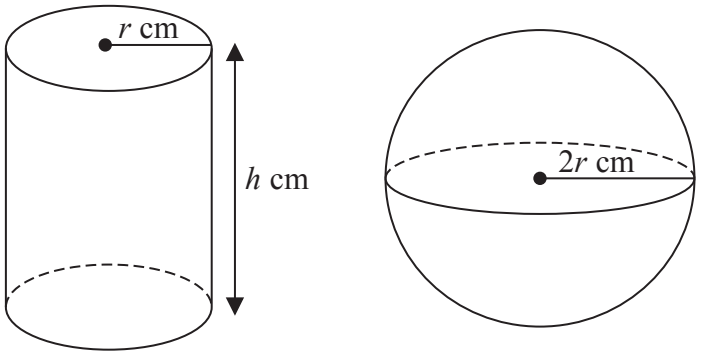


Diagram **NOT** accurately drawn

The cylinder has radius r cm and height h cm.
The sphere has radius $2r$ cm.

The volume of the cylinder is equal to the volume of the sphere.
Find an expression for h in terms of r.
Give your answer in its simplest form.

.....

The diagram shows a sector $OAPB$ of a circle, centre O.

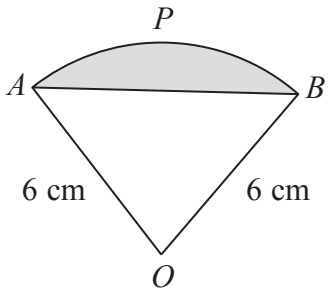


Diagram **NOT** accurately drawn

AB is a chord of the circle.
$OA = OB = 6$ cm.

The area of sector $OAPB$ is 5π cm^2

Calculate the perimeter of the shaded segment.
Give your answer correct to 3 significant figures.

..... cm