

Question 1

Question 9

(suggested maximum time: 5 minutes)

For each of the events A, B, C, D and E below, estimate its probability and place the letter in the most appropriate position on the probability scale below.

A name is picked at random from a list of 50 girls and 50 boys.

A = A girl's name is picked.

One card is drawn at random from a pack of playing cards.

B = The card is a diamond.

A day is chosen at random from a list of the days of the week.

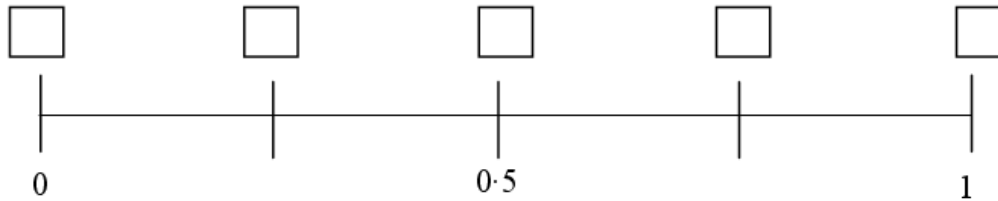
C = The name of the day contains the letter a.

One number is picked at random from the set {1, 2, 3, 4, 5, 7, 11, 13}.

D = The number chosen is a prime number.

The three angles of a particular triangle are measured and added together.

E = The answer is 100° .



Question 2

Question 10

(suggested maximum time: 5 minutes)

Sophie has a box of buttons.

| |
|--|
| Contents 3 yellow buttons 5 green buttons 7 red buttons 4 purple buttons 1 black button |
|--|

(a) How many buttons are in the box? _____

She takes a button from the box at random.

(b) What is the probability that Sophie will get a black button?

| |
|--|
| |
| |

(c) Write the missing colour in the sentence below.

The probability that Sophie will get abutton is $\frac{1}{4}$.

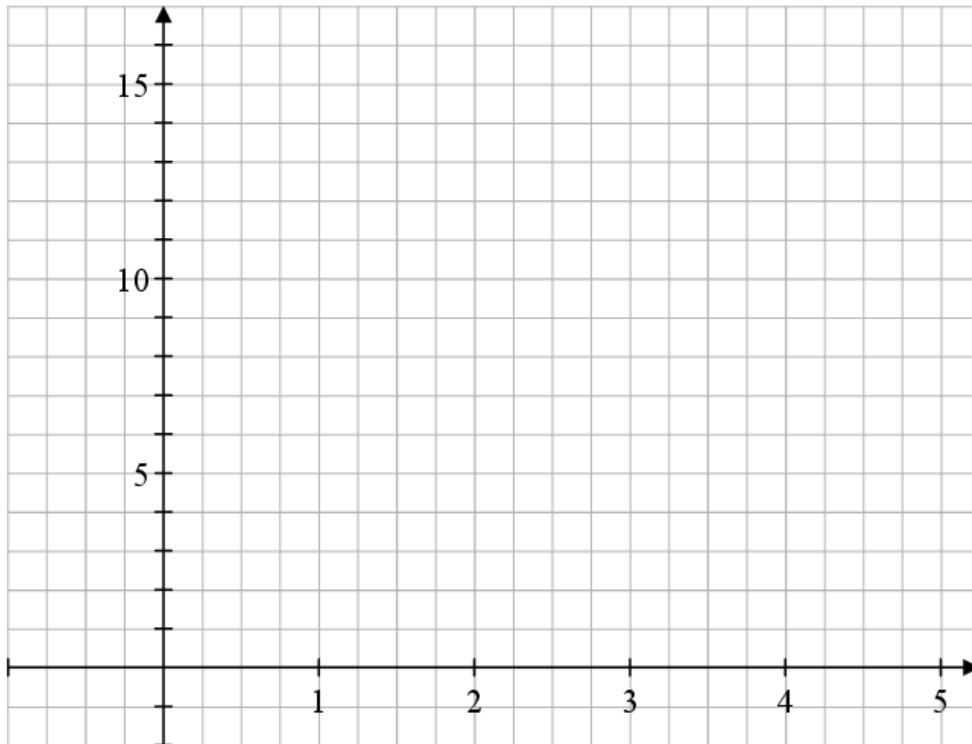
Question 4

- (a) Given that $y = 2x + 5$, complete the table below.
Show all your work.


| | | | | | |
|-----|---|---|----|---|---|
| x | 1 | 2 | 3 | 4 | 5 |
| y | | | 11 | | |



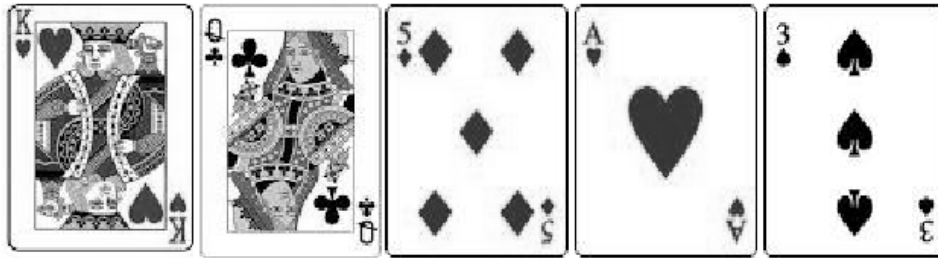
- (b) Using your answers from (a), draw the graph of $y = 2x + 5$ from $x = 1$ to $x = 5$.



- (ii) Use your graph to find the value of y when $x = 3.5$. _____

 Work to be shown on the graph and answer to be written here. _____.

Question 7



(a) A card is picked at random from the five cards above.

What is the probability of picking:

(i) a King?

(ii) a King or a Queen?

(b) What fraction of the five cards above are hearts?

Question 9




(b) A car left Galway at 07:30 and arrived in Dublin at 10:30.

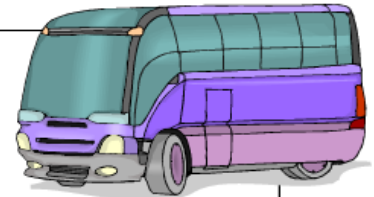
(i) How many hours did the car take to travel from Galway to Dublin?

(ii) The car travelled from Galway to Dublin at an average speed of 70 km/h.
What distance did the car travel?



(iii) A bus took 4 hours to travel the same distance.
What was the average speed of the bus in km/h?

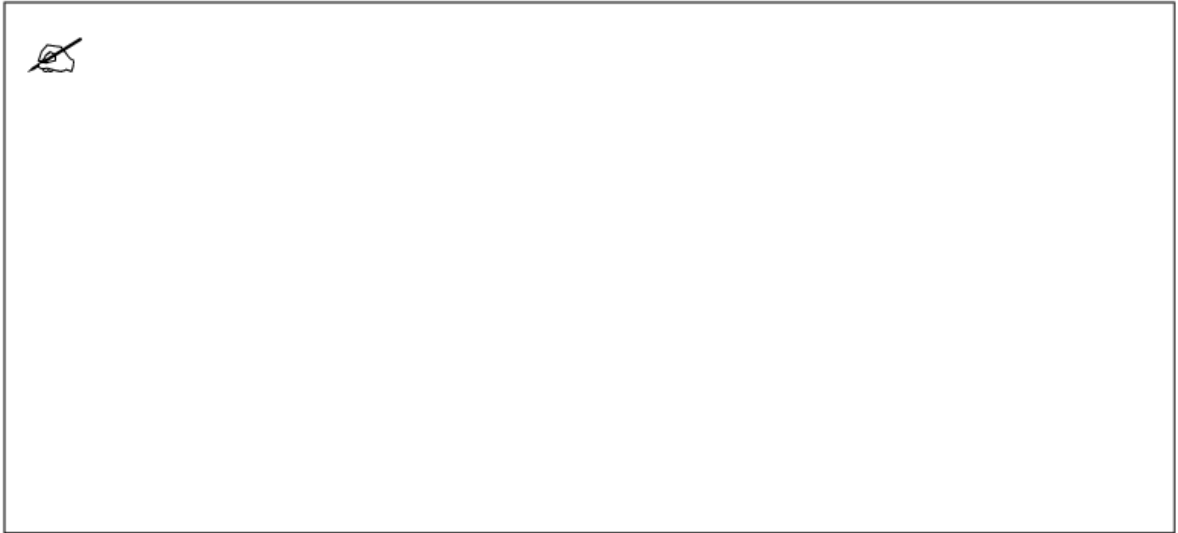




Question 10

(c) I invest €1250 in a bank for two years at 4% per annum compound interest.

(i) Calculate the interest earned at the end of the first year.

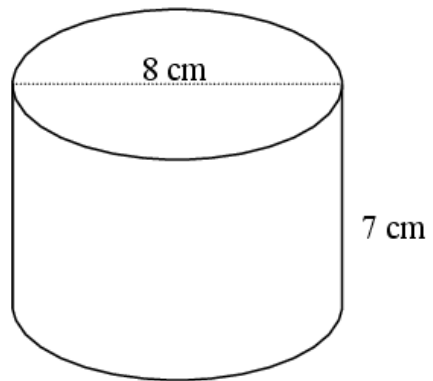


(ii) Calculate the total interest earned at the end of the two years.



Question 11


- (c) The diameter of a solid cylinder is 8 cm. Its height is 7 cm.



- (i) Write down the length of the radius.

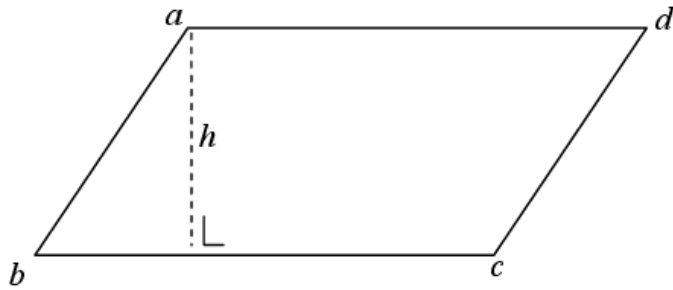
Radius =

- (ii) Find the volume of the cylinder, taking $\pi = 3.142$.

 Volume = $\pi r^2 h$

Question 12

(b) $abcd$ is a parallelogram.



(i) Using your ruler measure the length of the base $[bc]$.

length of $[bc]$ = _____

(ii) Using your ruler measure the perpendicular height h .

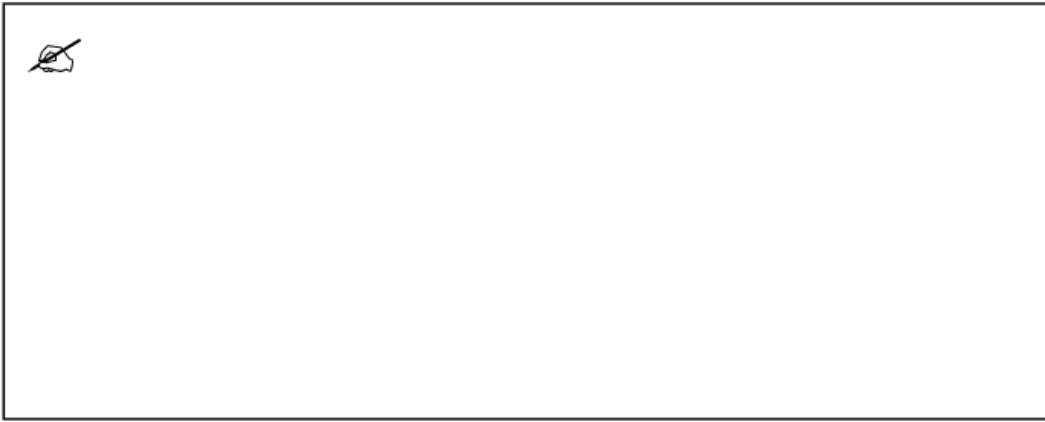
$h =$ _____

(iii) Calculate the area of the parallelogram.

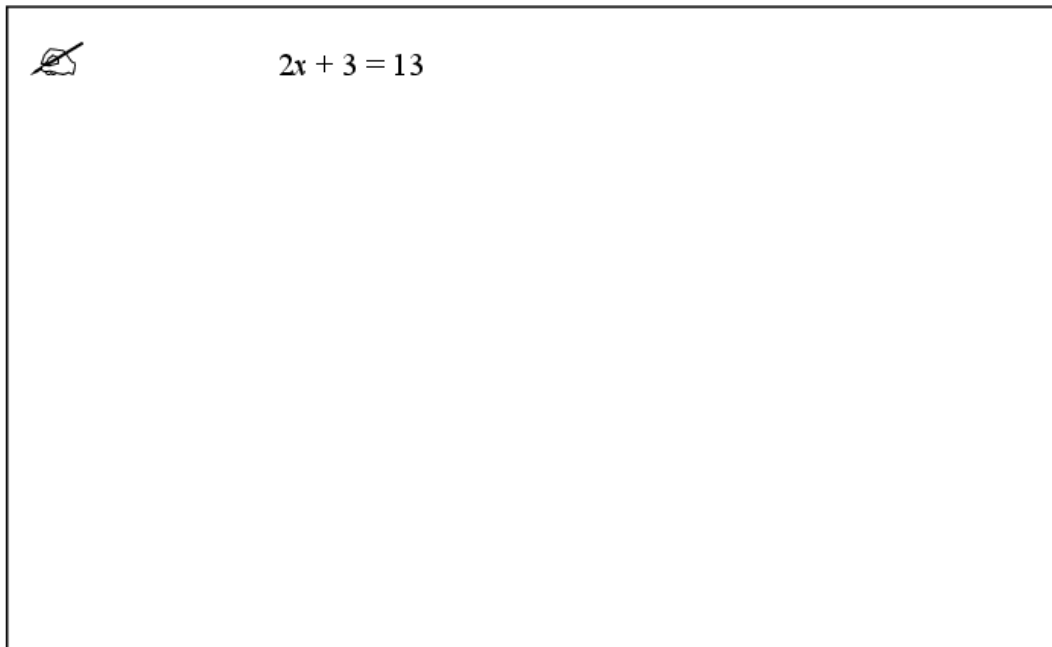


Question 13

(b) (i) Simplify $3(x+1) + 2(x-1)$.



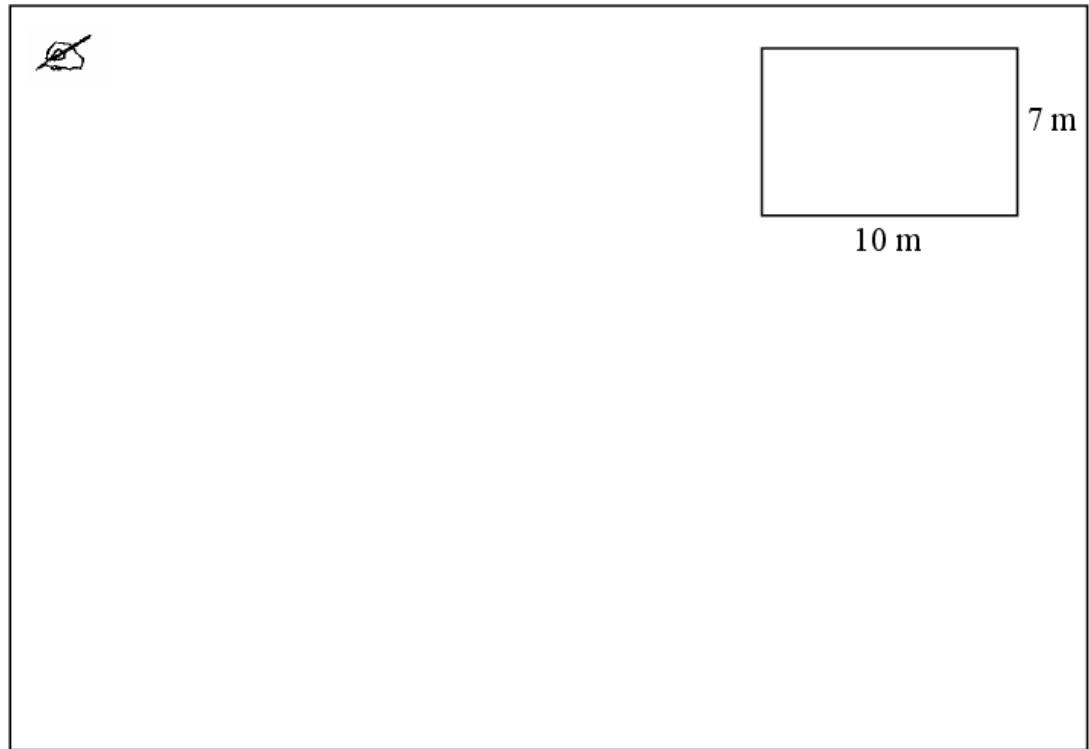
(ii) Solve for x :



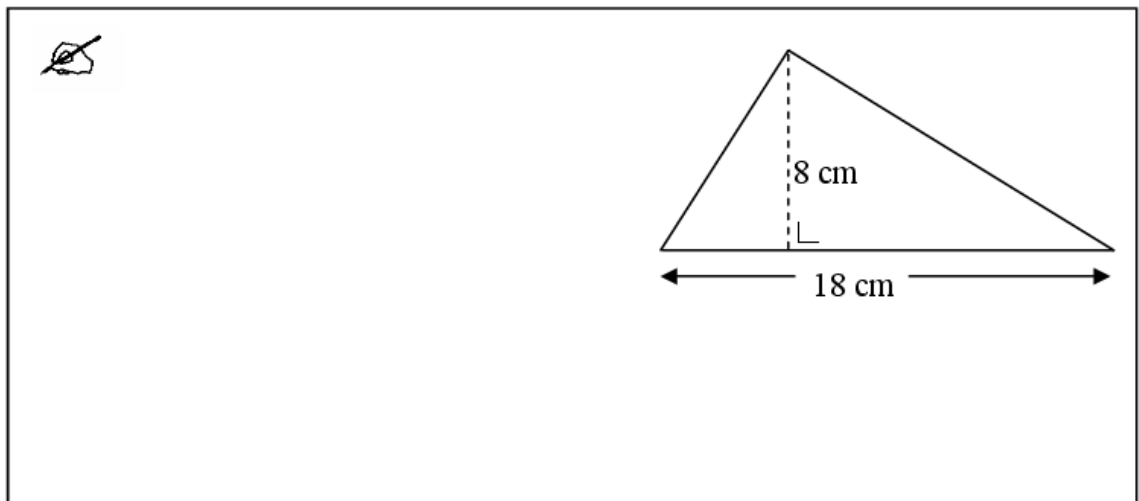
$2x + 3 = 13$

Question 14

- (b) (i) A rectangle is 10 m long and 7 m wide.
Calculate the perimeter of the rectangle.



- (ii) Find the area of the given triangle.



Question 15

- (c) I invest €625 in a bank for two years at 4% per annum compound interest.



- (i) Calculate the interest earned at the end of the first year.



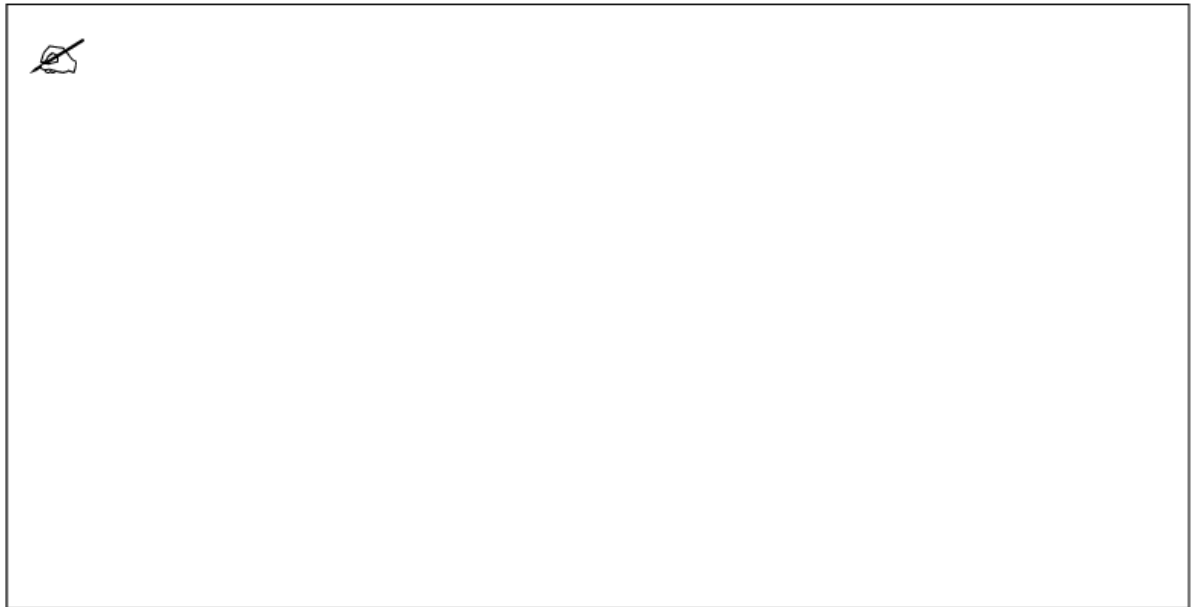
- (ii) Calculate the total interest earned at the end of the two years.

Question 16

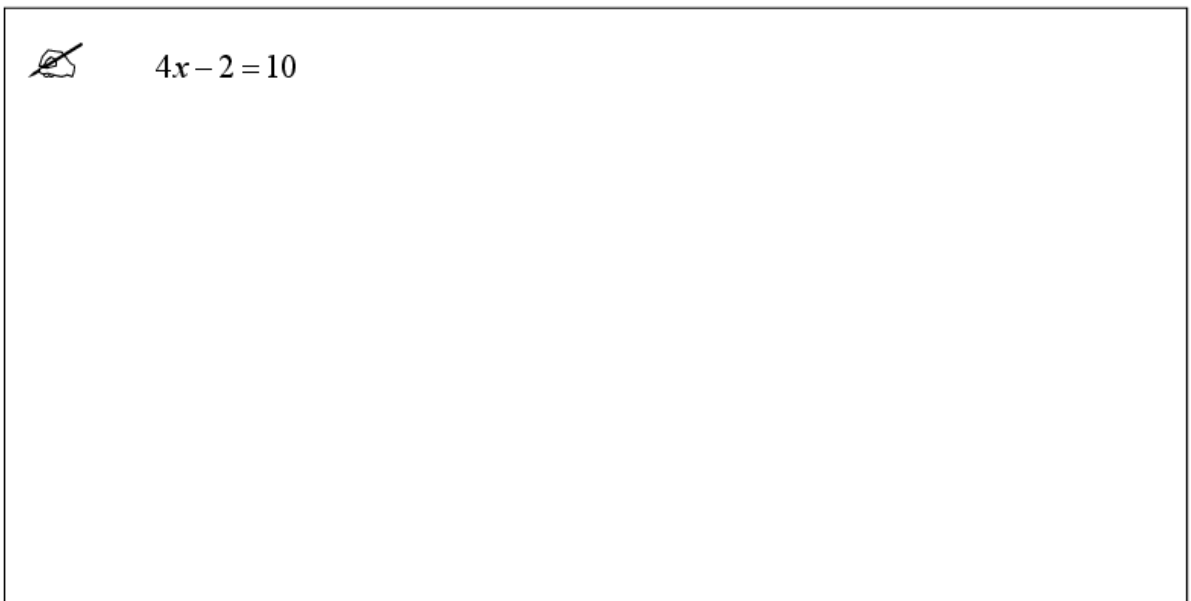
4. (a) Find the value of $3a + 2b$, where $a = 4$ and $b = 5$.



- (b) (i) Simplify $2(x + 4) + 5(x - 2)$.



- (ii) Solve for x :



$4x - 2 = 10$

Question 17

5. (a) (i) Change 3.75 km to metres.

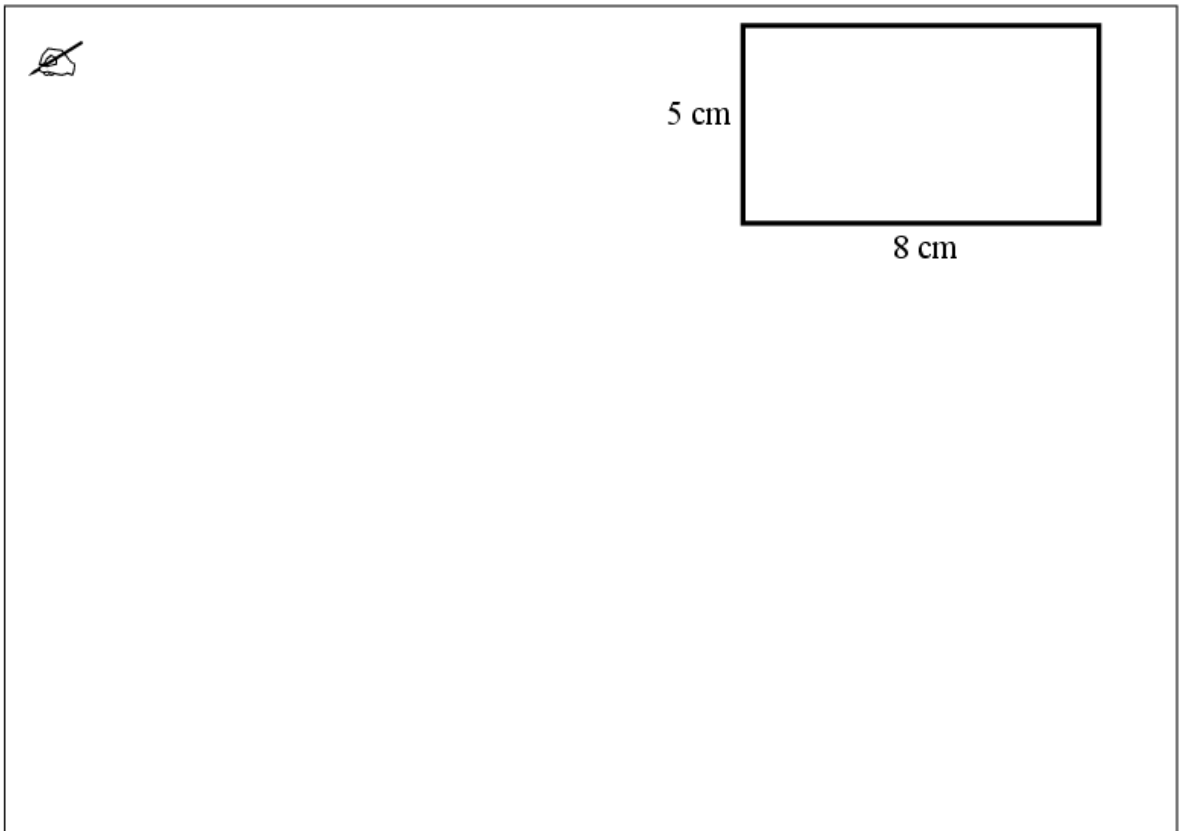


- (ii) Change 5.2 cm to millimetres.

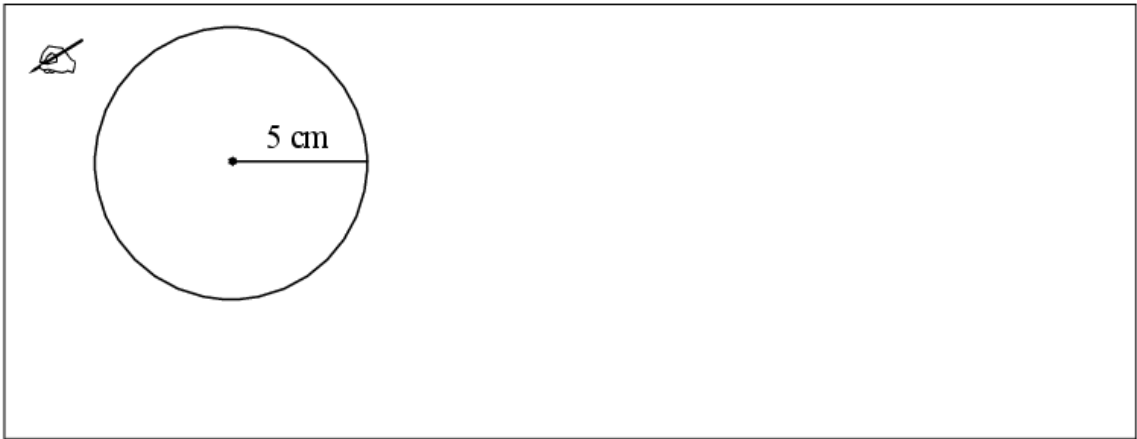


- (b) (i) A rectangle measures 8 cm by 5 cm.

Find the perimeter of the rectangle.



- (ii) The radius of a circle is 5 cm.
Calculate the perimeter of the circle. Use $\pi = 3.142$.

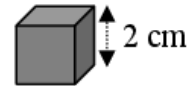


- (c) (i) A rectangular block of wood is 10 cm long, 4 cm wide and 4 cm high.

Find the volume of the block in cm^3 .



- (ii) The length of a side of a solid wooden cube is 2 cm.
Find the volume of the cube in cm^3 .

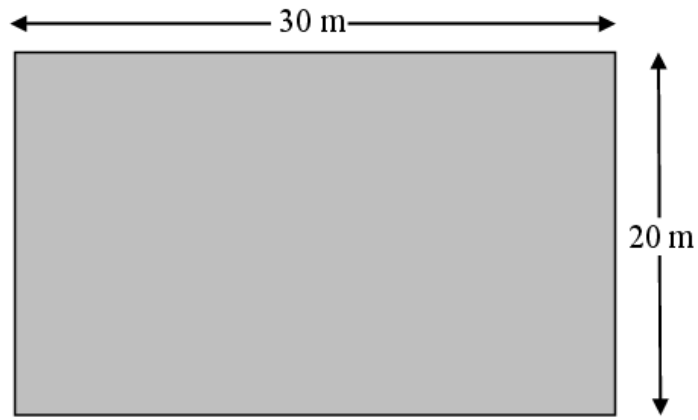


- (iii) How many of these wooden cubes can be made from the block of wood in part (i)?



Question 18

(b) A rectangular garden is 30 metres long and 20 metres wide.



(i) Find the area of the garden in m^2 .



(ii) A square flowerbed is dug in the garden.
The side of the flowerbed is 8 metres long.
Find the area of the flowerbed in m^2 .





A diagram of a square flowerbed. The side length is indicated by a horizontal double-headed arrow above the square, labeled "8 m". The side length is also indicated by a vertical double-headed arrow to the right of the square, labeled "8 m". The interior of the square is filled with a cross-hatch pattern.

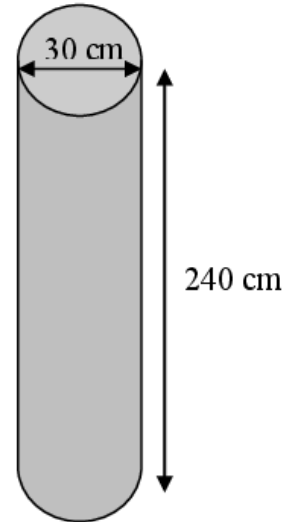
- (iii) The rest of the garden is covered in grass. Find the area under grass in m^2 .




- (c) A concrete pillar is in the shape of a cylinder.
The diameter of the pillar is 30 cm and its height is 240 cm.

- (i) Write down the length of the radius of the pillar.

Radius =



- (ii) Find the volume of the pillar, taking $\pi = 3.142$.

 Volume = $\pi r^2 h$
=

- (iii) Four of these pillars are used in a building.
Find the total volume of concrete needed for the four pillars.



Question 19

6. (a) A piece of wood is 3.65 metres in length.

(i) What is the length of the piece of wood in centimetres?

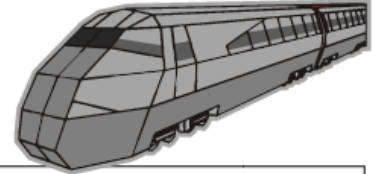


1 metre = 100 cm.

(ii) This piece of wood is cut in two. The longer piece is 195 cm long.
Calculate the length of the shorter piece in cm.



(b) A train left Dublin at 11:30 and arrived in Cork at 14:00.



(i) How long did the journey take?

(ii) The train travelled from Dublin to Cork at an average speed of 96 km/h.
What distance did the train travel?



(iii) A lorry took four hours to travel the same distance.
What was the average speed of the lorry in km/h?

