145/145 = 100%.

1st Year November Assessment

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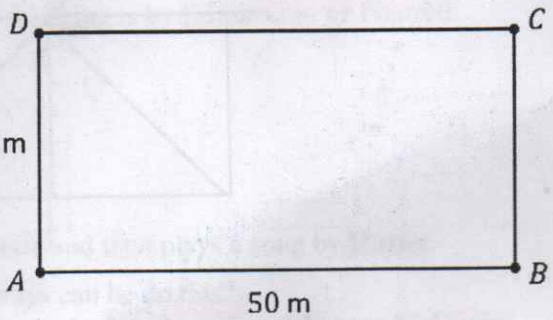
Teacher: Ms. McCormack, Ms.Sexton

Question 1 (15 marks)

A rectangle $ABCD$ has a length of 50 m and a width of 25 m.



(a) Find the area of the rectangle $ABCD$.

$50_m \times 25_m = 1250 m^2$

50_m
$\times 25_m$
$1250 m^2$

(b) Find the length of the perimeter of the rectangle $ABCD$.

$50_m + 50_m + 25_m + 25_m = 150$ m

50_m
50_m
25_m
$+25_m$
150_m

$100_m + 25_m + 25_m$
$125_m + 25_m$
150 m

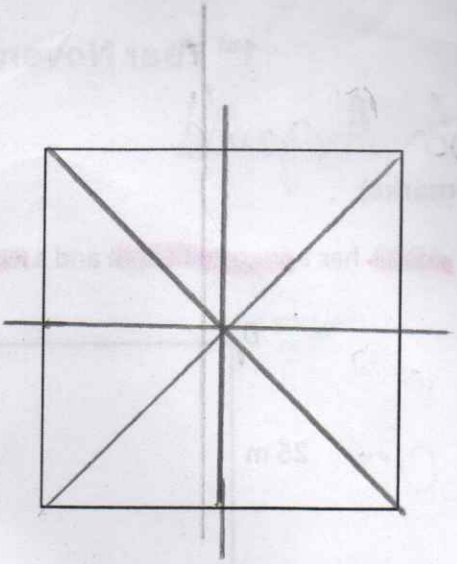
(c) i. How many axes of symmetry does a circle have?

An infinite amount

15/15.

ii.

The diagram shows a square.
Draw in all its axes of symmetry.



Question 2 (20 marks)

The songs on Gavin's phone are shown in the table below.

Singer	Number of songs
Usher	8
Pharrell	15
Ed Sheeran	4
Hozier	3

Gavin has **30 songs** on his phone, in total.

(a) Find how many songs by Usher are on Gavin's phone.

15 + 4 + 3 =
19 + 3 = 22
30 − 22 = 8 songs by Usher

10/10

Gavin plays a song at random on his phone.

(b) Find the **probability** that this song is by Hozier.

$\frac{3}{30} = \frac{1}{10}$

Answer = $\frac{1}{10}$

(c) Find the **probability** that this song is by Ed Sheeran **or** Pharrell.

$15+4=19$ $\frac{19}{30}$

Answer = $\frac{19}{30}$

15

Gavin plays a song by Ed Sheeran, and then plays a song by Hozier.

(d) In **how many different ways** can he do this?
Remember that he has 4 songs by Ed Sheeran and 3 songs by Hozier.

1+1 2+1 3+1 4+1
1+2 2+2 3+2 4+2
1+3 2+3 3+3 4+3
1+4 2+4

12 different ways

Question 3 (15 marks)

Evaluate the following:

Show all working out;

1. $5 \times 8 - 3 + 6$, 40 − 3 + 6, 37 + 6, (43) 5/5

2. $\frac{1}{2} \times \frac{3}{5} + \frac{1}{4}$, $\frac{3}{10} + \frac{1}{4}$, $\left(\frac{11}{20}\right)$ 5

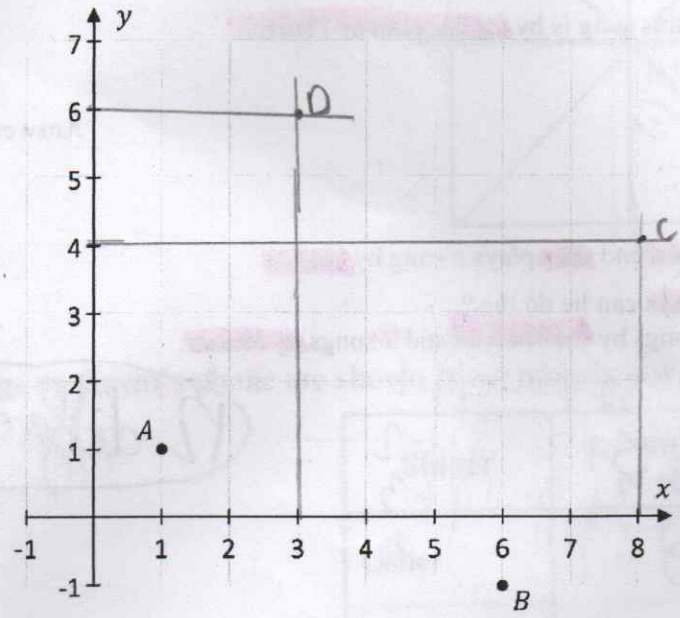
3. $\frac{14}{15} - \frac{3}{5} + \frac{7}{3}$, $\frac{14}{15} + \frac{7}{3}$, $\frac{28}{13} = 2\frac{12}{53}$ 5

30/30

Question 4 (10 marks)

A, B, C, and D are four points in the co-ordinate plane.

(a) **(i)** The points A and B are shown on the co-ordinate diagram below.
Plot and **label** the points $C(8,4)$ and $D(3,6)$ on the same co-ordinate diagram.



(ii) **Write** the co-ordinates of the points A and B in the spaces below.
The co-ordinates of the points C and D are already given.

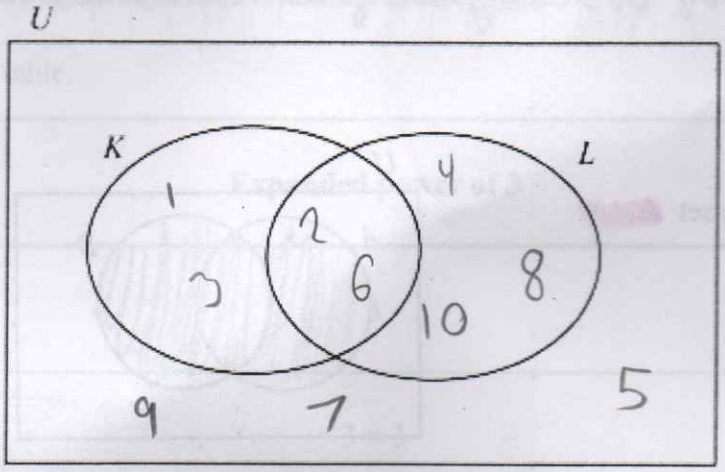
$A =$ (1 , 1) $B =$ (6 , -1) $C = (8,4)$ $D = (3,6)$

10

Question 5: Sets (30 marks)

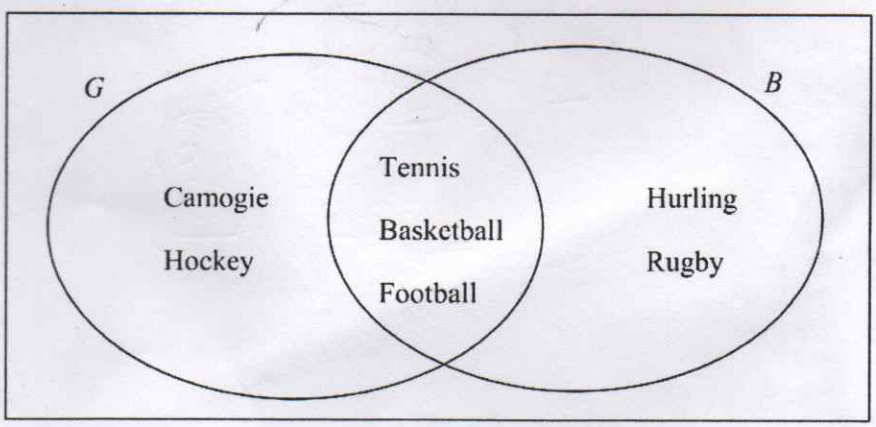
U = { Natural numbers from 1 to 10 inclusive } K = { Factors of 6 } L = { Even numbers }

(a) Fill in the Venn diagram below:



(b)

The sports played by a set of girls G and a set of boys B in a Limerick school are shown in the Venn diagram.



Describe the region of the diagram where camogie and hockey are located.

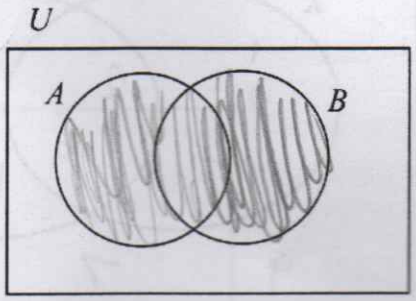
5 The sports played by a set of girls in a Limerick school

Describe the region of the diagram where tennis, basketball and football are located.

8 The sports played by both boys and girls in a Limerick school

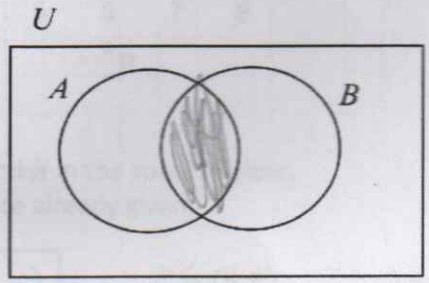
(c)

In the Venn diagram, shade the set $A \cup B$.



5

In the Venn Diagram, shade the intersection



5

Question 6 (15 marks)

(a)

The table below shows the values when 3 is raised to certain powers.

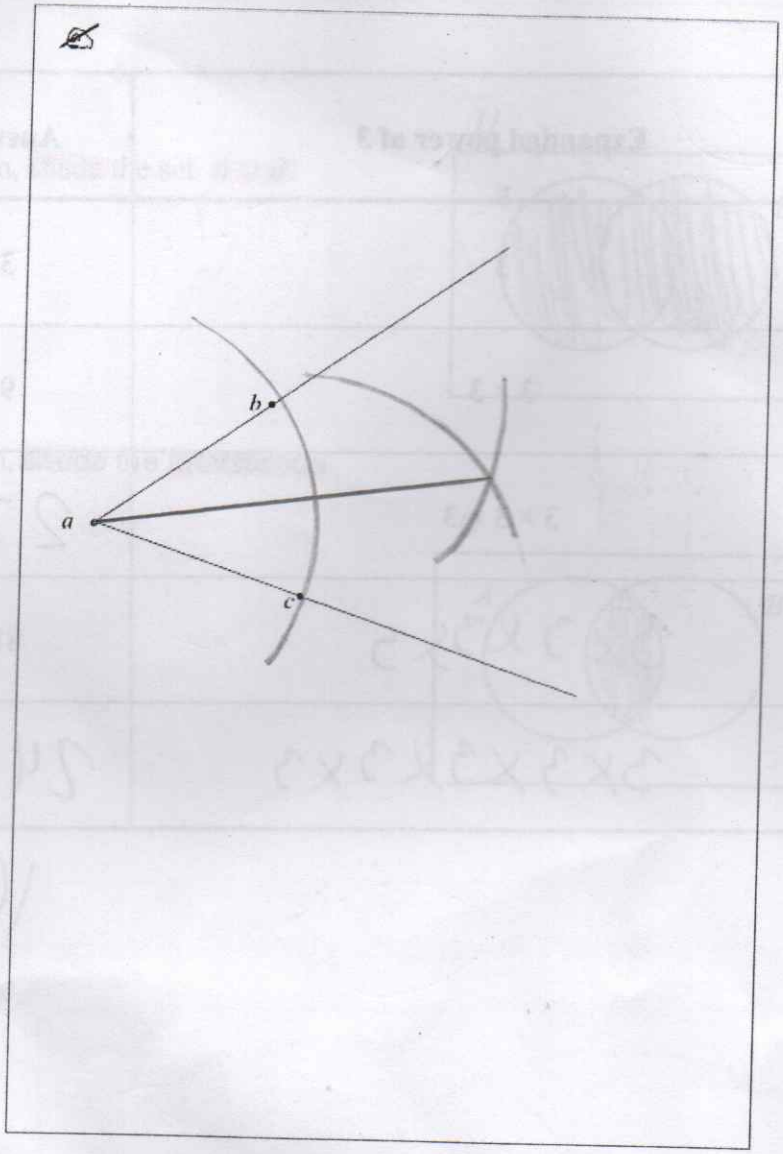
Complete the table.

Power of 3	Expanded power of 3	Answer
3^1	3	3
3^2	3×3	9
3^3	$3 \times 3 \times 3$	27
3^4	3x3x3x3	81
3^5	3x3x3x3x3	243

10

(b)

Bisect the given angle $\angle bac$ without using a protractor.
Show all construction lines.

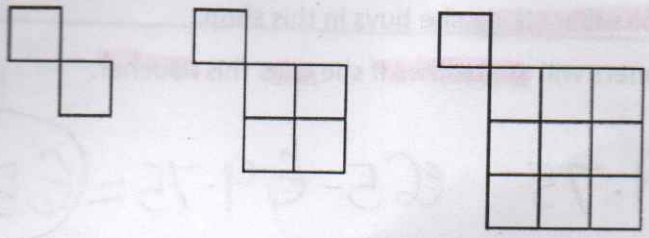


3

4/4

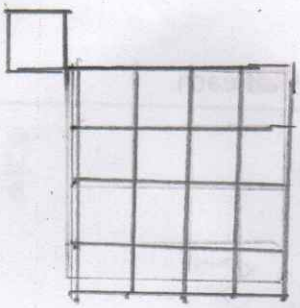
Question 7 (10 marks)

The first three patterns in a sequence are shown.



Pattern 1 Pattern 2 Pattern 3

(a) Draw Pattern 4 in the sequence.



5

(b) Fill in the table to show the number of small squares in each of the first four patterns.

Pattern	Number of small squares
1	2
2	5
3	10
4	17

5

10/10

Question 8 (15 marks)

runners are for sale in a local sports shop for €65

Amina has a voucher for 15% off anything she buys in this shop.

Work out how much the runners will cost Amina if she uses this voucher.

$\frac{65}{100} \times \frac{15}{1} = 9.75$ €65 - €9.75 = €55.25

✓5

The local sports shop buys t-shirts for €20 each and sells them for €28 each.

Work out the **profit** on each t-shirt, in euro.

€28 - €20 = €8

5

Work out the **percentage profit** on each t-shirt (as a percentage of the cost price).

$\frac{20}{100} \div \frac{8}{1} = \frac{1}{40}$ 40%

5

Question 9 (20 marks)

Write the following as a single fraction in its simplest form:

$$\frac{2}{3} + \frac{5}{7}$$

$\frac{2}{3} + \frac{5}{7} = \frac{29}{21}$

$\frac{14}{21} + \frac{15}{21} = \frac{29}{21}$

5

Evaluate

$$\left(\frac{1}{4} - \frac{1}{3}\right) \times \frac{8}{6}$$

$\left(\frac{1}{4} - \frac{1}{3}\right) \times \frac{8}{6}$

$-\frac{1}{12} \times \frac{8}{6}$

$-\frac{1}{9}$

5

Simplify $2a - 5n + 2n + 6a$.