



# Mathematics Challenge 2015

by

Children's Well-wishers Network (CWN)

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## YEAR 2

45 minutes

Do **NOT** open this booklet until instructed

Calculators must **NOT** be used



- Write your **name** and **candidate number** in the spaces provided at the top of the page.
- You have **45** minutes for this paper which is worth **50** marks.
- Write your answers in **pencil**. Do **NOT** use a pen.
- Answer **all** 25 questions, attempting them in order and writing your answers clearly.
- If you find that you cannot answer a question straight away leave it blank and move on to the next question. Return to it later if you have time.
- Wherever applicable answers should carry units.
- Scrap paper is available on request.

For Examiner's use only	
Question No.	Score
Q1	/ 2
Q2	/ 2
Q3	/ 1
Q4	/ 3
Q5	/ 1
Q6	/ 1
Q7	/ 2
Q8	/ 2
Q9	/ 1
Q10	/ 1
Q11	/ 1
Q12	/ 1
Q13	/ 1
Q14	/ 2
Q15	/ 3
Q16	/ 3
Q17	/ 3
Q18	/ 1
Q19	/ 6
Q20	/ 2
Q21	/ 1
Q22	/ 2
Q23	/ 2
Q24	/ 4
Q25	/ 2
Total	/ 50

**Q1)** Hansika had winked 144 times in 12 days.



How many times did she wink each day?

\_\_\_\_\_

(1 mark)

What assumption have you made?

\_\_\_\_\_

\_\_\_\_\_

(1 mark)

**Q2)** Describe this sequence:

42, 52, 62, 72...

\_\_\_\_\_

\_\_\_\_\_

(1 mark)

Write the next three numbers:

\_\_\_\_\_

(1 mark)

**Q3)**



What is half of the above amount?

\_\_\_\_\_

(1 mark)

**Q4)** Complete the boxes for these pyramids with the numbers of faces, edges and vertices for each shape.



Faces

Edges

Vertices



Faces

Edges

Vertices

(3 marks)

**Q5)** John is making three-digit numbers with these cards.



What is the difference between the numbers that have highest value and lowest value?

\_\_\_\_\_

(1 mark)

**Q6)** Mary thinks of a three-digit number made from 3 consecutive digits.

It has an odd digit.  
It has two even digits.  
The sum of the digits is 15.

What are the possibilities?

\_\_\_\_\_

\_\_\_\_\_

(1 mark)

**Q7)**

**(a)** When you double the double of a number what do you get?

\_\_\_\_\_

\_\_\_\_\_

(1 mark)

**(b)** When you half the double of a number what do you get?

\_\_\_\_\_

\_\_\_\_\_

(1 mark)

**Q8)** Imagine rolling two normal dice.



**(a)** The **score** is the **total** number of dots facing up.

What is the highest possible score?

Answer: \_\_\_\_\_

(1 mark)

**(b)** You repeat the game.

This time the **score** is the **difference** in number of dots facing up.

What is the highest possible score?

Answer: \_\_\_\_\_

(1 mark)

**Q9)** A box contained some buttons.  $\frac{1}{4}$  of them were green, and  $\frac{1}{4}$  were orange and the rest were white.

If there were 48 white buttons, how many buttons were there altogether?

\_\_\_\_\_

(1 mark)



**Q10)** A box contains 450 disks in all. Of them, 126 are music CDs and the rest are DVDs.

How many DVDs are in the box?

\_\_\_\_\_

(1 mark)

**Q11)** Write the time first in **hours:minutes**, and then on the next line use the words “past” or “till”.

<p><b>a.</b></p>  <p>_____ : _____</p> <p>_____ past _____</p>	<p><b>b.</b></p>  <p>_____ : _____</p> <p>_____</p>
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(1 mark)

**Q12)** Vijay is 10 years old.

Jeyam is 2 years younger than Vijay.

Sam is 1 year older than Jeyam.

Who is the oldest child?

Answer: \_\_\_\_\_

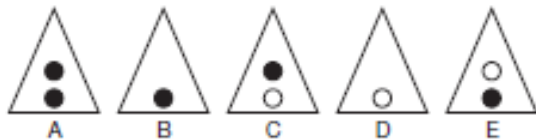
**(1 mark)**

**Q13)**



What comes next?

Tick the correct shape below.



**(1 mark)**

**Q14)** Consider these three figures with colours.



Figure A

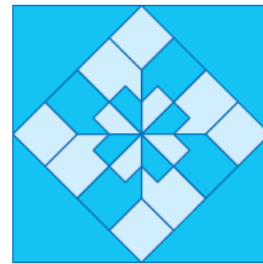


Figure B

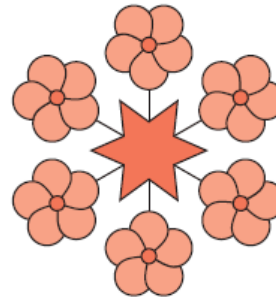


Figure C

**(a)** Which figure(s) has at least one line of symmetry?

\_\_\_\_\_ **(1 mark)**

**(b)** What effect does the colour have on your answer in part **(a)**?

\_\_\_\_\_

\_\_\_\_\_ **(1 mark)**

**Q15)**

(a) Sam bought 6 ice cream cones for his family. He gave them to his mum, dad, 2 brothers and 2 sisters. They cost £0.99 each.

How much did he spend?

\_\_\_\_\_ (1 mark)

(b) Cathy spent 50p on Monday, 50p on Tuesday and £1 on Wednesday.

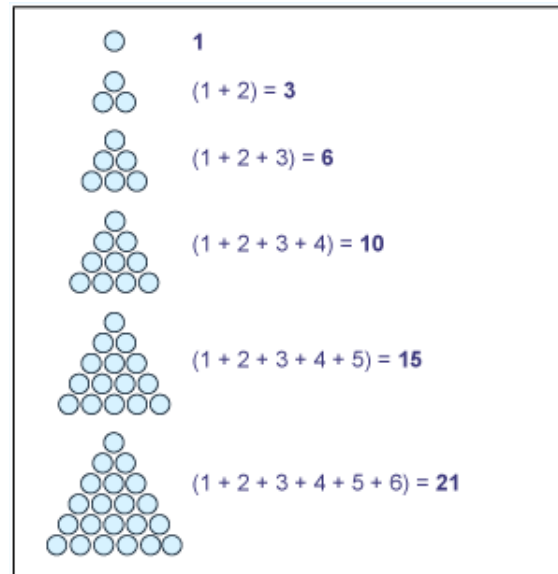
How much did she spend altogether?

\_\_\_\_\_ (1 mark)

Could you work out how much money did she have left with her?

\_\_\_\_\_ (1 mark)

**Q16)** Look at these patterns of triangles and numbers in **bold**.



(a) How many rows will be there in the next triangular pattern?

\_\_\_\_\_ (1 mark)

(b) What **number** the next triangular pattern will generate?

\_\_\_\_\_ (1 mark)

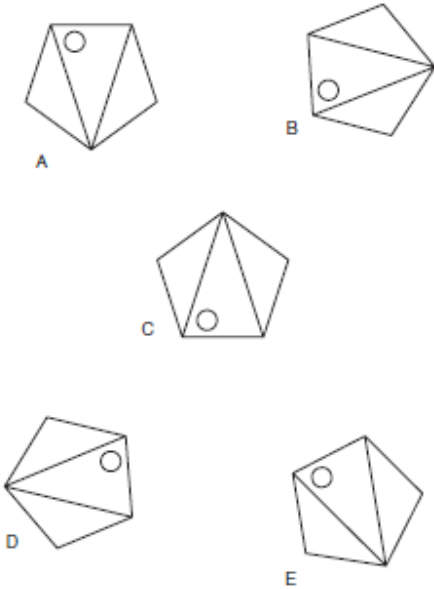
(c) If you add the numbers from two consecutive patterns what sort of thing will you notice?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(1 mark)

**Q17)**

(a) Which shape is the **odd one out**? Tick it.



(1 mark)

(b) Which number is **odd**? Circle it.

34, 45, 56, 98

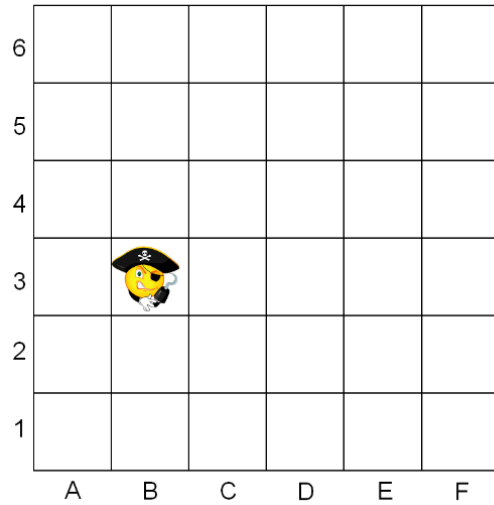
(1 mark)

(c) Which number is **odd one out**? Circle it.

35, 53, 45, 65

(1 mark)

**Q18)**



Pirate Pete is at B3.

To find the treasure, he must move 3 squares to the right and 2 squares down.

Where is the treasure?

\_\_\_\_\_ (1 mark)

**Q19)** The first **working day** of each month is the first Monday in that month.

(a) What is the date of the **fifth** working day in this January month?

January						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Answer: \_\_\_\_\_ (1 mark)

(b) Mohan's **fifth** birthday was on 18<sup>th</sup> May 2013. When was he born?

May						
Mo	Tu	We	Th	Fr	Sa	Su
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		
2:00	10:00	18:00	25:00	31:00		

Answer: \_\_\_\_\_

(1 mark)

(c) There are two consecutive months with 31 days. Which are they?

Pair 1: \_\_\_\_\_ and \_\_\_\_\_

Pair 2: \_\_\_\_\_ and \_\_\_\_\_

(2 marks)

(d) The number of days from 1<sup>st</sup> of January to 31<sup>st</sup> of December is 365 days whereas the number of days from 31<sup>st</sup> of December to 1<sup>st</sup> of January is 1 day.

Senthil could not understand.

Explain.

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(e) Is 2400 a leap year? (1 mark)

\_\_\_\_\_

(1 mark)

Q20)

Some of the sentences from (1) to (5) are **absurd**. Circle them.

(1) The length of the classroom is 15 kilograms.

(2) The capacity of my bathroom tub is 15 meters.

(3) My violet ribbon is 15 hours.

(4) I will finish this exam in 45 grams.

(5) Tomorrow is Sunday.

(1 mark)

Some of the **measures** from (6) to (8) are **not practically sensible**. Circle them.

(6) My just born brother weighs 70 kg.

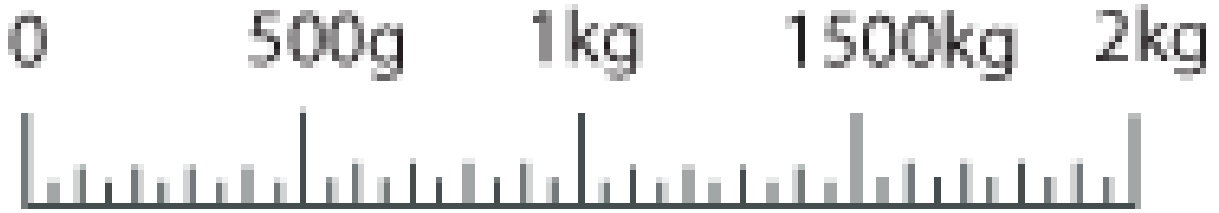
(7) The tubs Greeks used to take baths are usually 7 cubic centimetres large.

(8) I can finish this race in 45 minutes.

(1 mark)



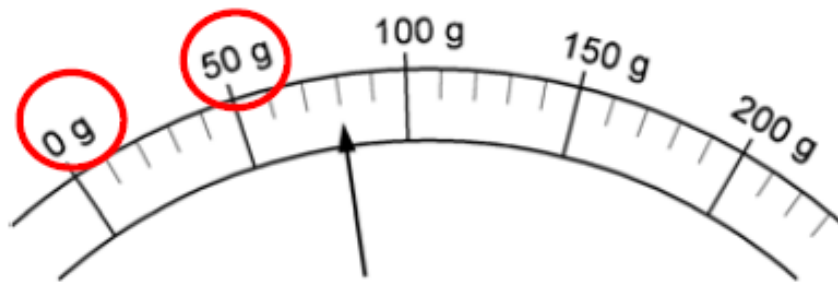
**Q21)** A piece of cheese has a mass of 350 grams. Mark an arrow on the scale to show the reading for 350 g.



(1 mark)

**Q22)**

(a)



Where does the arrow point to?

\_\_\_\_\_ g

(1 mark)

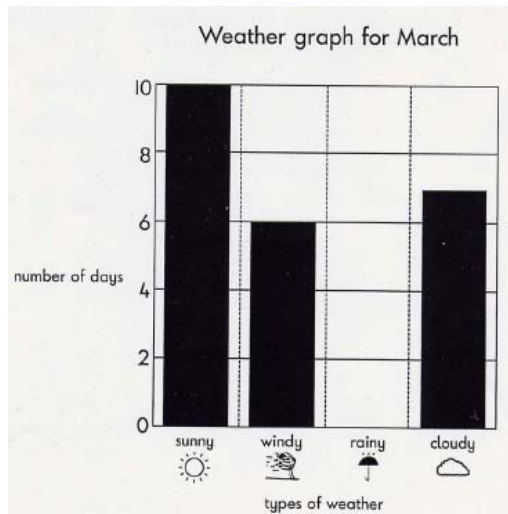
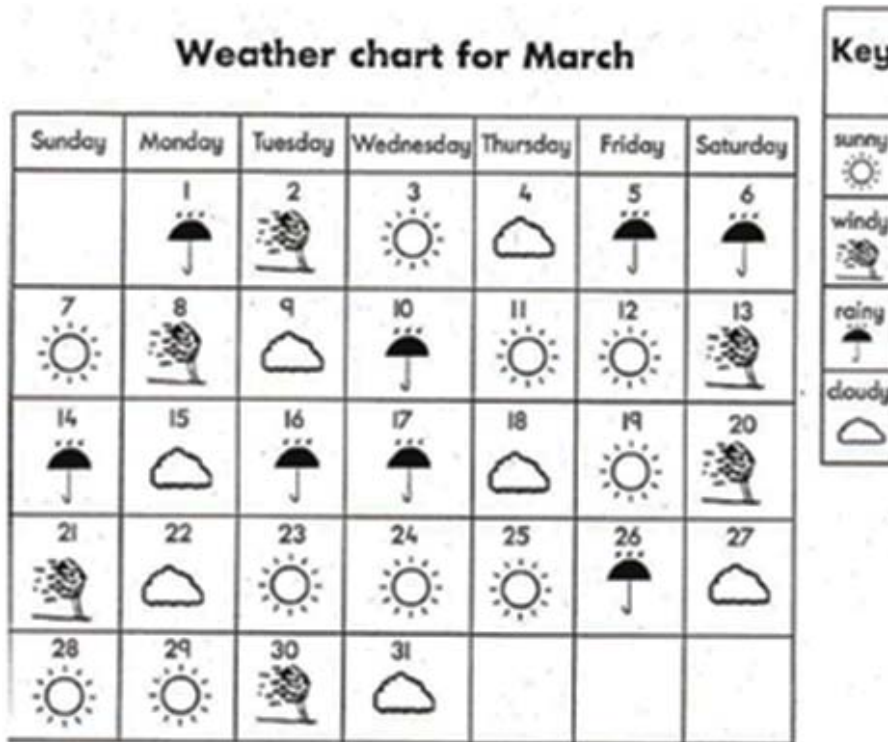
(b) Sam got on the bus at half past 9. The bus ride took 45 minutes.

What time did he get off the bus?

\_\_\_\_\_

(1 mark)

**Q23) (a)** Using the weather data for March, complete the bar chart below.



**(1 mark)**

**(a)** Based on this year's weather data try to predict the weather for next March, assuming weather is seasonal.

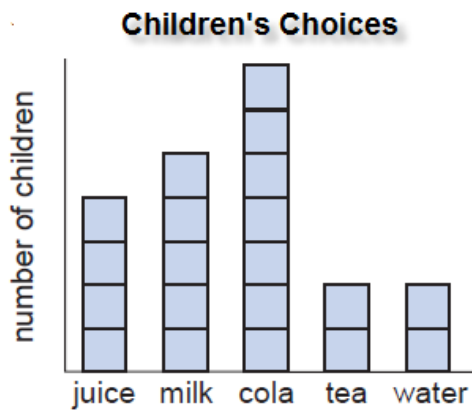
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**(1 mark)**

**Q24)** The following block graph is a result of a survey conducted in a class during summer 2015.



Using the information presented on the block graph answer the questions below.

**(a)** What do most children like to drink?

\_\_\_\_\_ (1 mark)

**(b)** How many children did we ask?

\_\_\_\_\_ (1 mark)

**(c)** Would the information be different if we asked in the winter 2015?

\_\_\_\_\_ (1 mark)

Why do you think so?

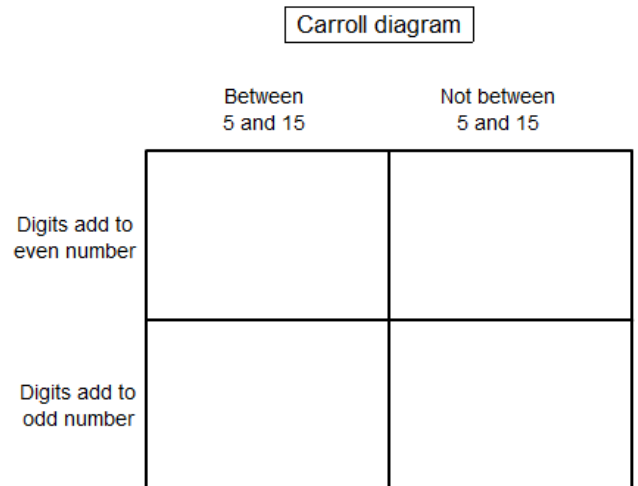
\_\_\_\_\_

\_\_\_\_\_ (1 mark)

**Q25)**

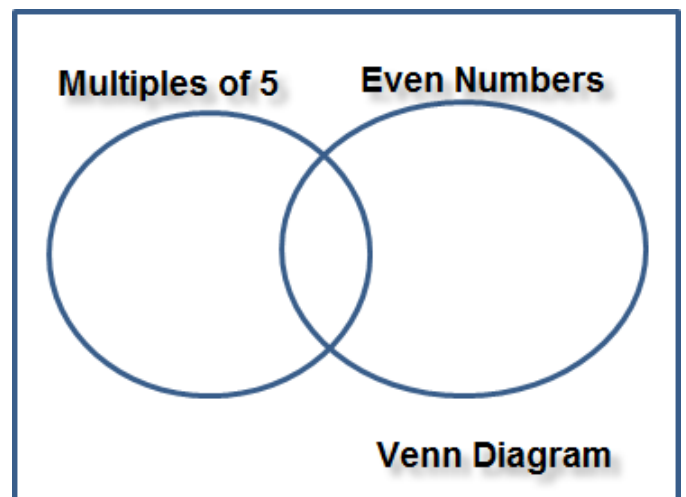
**(a)** Place the following numbers in the Carroll Diagram:

5, 15, 12, 22, 20, 99



(1 mark)

**(b)** Now place same numbers in this Venn diagram below:



(1 mark)