BONUS CHRISTMAS MATHS PUZZLES

(Ages 6–10)

1. Santa’s Sleigh Number Riddle

Santa needs 4 numbers that add up to **24**.
He has the digits: **3, 4, 6, 7, 8, 9**

Find:

- One set of **three numbers** that add to **24**
- One set of **four numbers** that add to **24**

(Multiple answers possible)

2. Elf Logic Grid

Three elves wrapped presents:

Elf	Paper Colour	Ribbon
Twinkle	**?**	**?**
Jingle	**?**	**?**
Spark	**?**	**?**

Colours: red, green, gold
Ribbon: stars, stripes, snowflakes

Clues:

1. The elf using **green** paper did **not** use star ribbon.
2. **Twinkle** used **gold** paper.
3. The elf with **striped** ribbon did **not** use red paper.
4. **Jingle** didn't use snowflake ribbon.

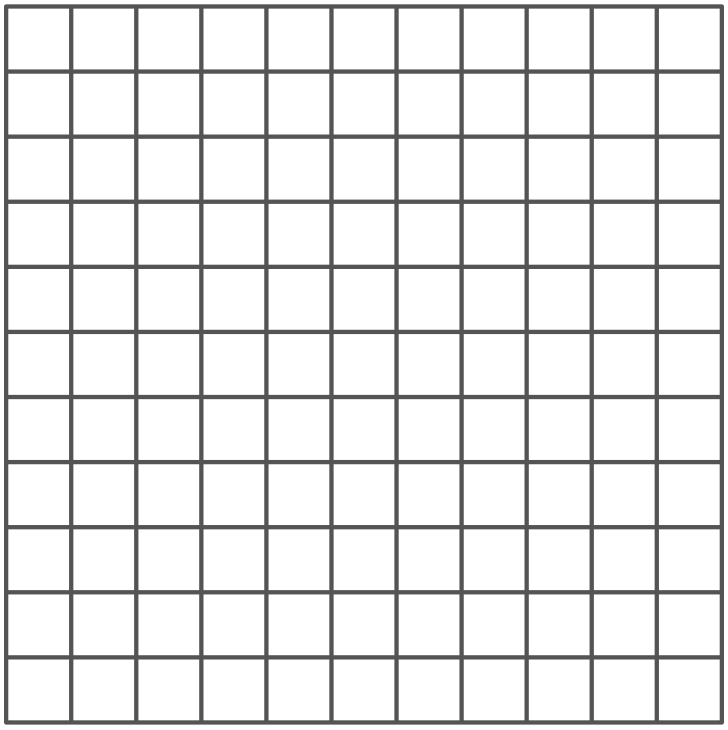
Fill the grid to work what colour of paper and ribbon each elf uses.

3. Christmas Coordinates

Christmas Shape Grid Challenge
Grab a simple 10×10 grid. Plot and join the points in each group to draw **four shapes** — can you guess what they make?

- **Shape 1:** (4,9) → (3,7) → (5,7) → (4,9)
- **Shape 2:** (4,7) → (2,4) → (6,4) → (4,7)
- **Shape 3:** (4,4) → (2,2) → (6,2) → (4,4)
- **Shape 4:** (3,1) → (3,0) → (5,0) → (5,1) → (3,1)

What Christmas shape appears?



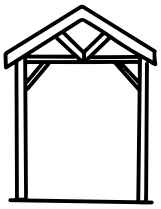
4. Reindeer Path Puzzle

Dasher needs to get to the stable.
He can only move **right (→)** or **up (↑)**.

Grid size: **3 by 3**

Start: bottom-left
Finish: top-right

Question:
How many different paths can he take?

		Finish 
Start 		

Tip: Use different coloured pens to draw possible pathways.

5. Bauble Pattern Sequence

Look at the pattern:

🎄⭐⭐⭐ | 🎄🎄 ⭐⭐ | 🎄🎄🎄⭐ | ?

What comes next?

6. Christmas Code-Breaker

Use this simple substitution:

A = 1
B = 2
C = 3
...
Z = 26

Decode the Christmas words:

20 18 5 5
12 9 7 8 20
19 14 15 23

Can you make up your own coded Christmas Message?

7. Picture Puzzle

Each picture stands for a number.

🎄 + 🎄 + 🎄 = 21
⭐ + 🎄 = 10

Find:

- The value of ⭐
- The value of 🎄
- Then calculate: 🎄 **× 2**

8. Elves’ Inequality Challenge

The elves sort toys into sacks.

Rules:

- Sack A has **more** toys than Sack B.
- Sack C has **fewer** than Sack B.
- Combined A + C = **20**
- Sack B has **7** toys.

Find possible values for A and C.

(Several answers possible; teaches reasoning not calculation speed.)

Bonus Christmas Maths Puzzles ANSWER SHEET

1. Sleigh Number Riddle
Examples:
Three numbers: 7 + 8 + 9 = 24
Four numbers: 3 + 4 + 6 + 11 = 24 (accept any valid set using allowed digits; many possible)

2. Elf Logic Grid
Twinkle = gold, striped
Jingle = red, stars
Spark = green, snowflakes

3. Snowman Coordinates
A Christmas Tree Shape

4. Reindeer Path
10 different paths - find as many as possible by alternating the sequence of up and right moves made.

5. Pattern Sequence
(Four trees, zero stars)

6. Code-Breaker
TREE
LIGHT
SNOW

7. Picture Puzzle
Star = 3
Tree = 7
Tree x 2 = 14

8. Inequality Challenge

A > 7

C < 7

A + C = 20

Solution: Any example where A + C together make 20, where A is more than 7 and C is less than 7.

Correct sets include::

A = 14, C = 6

A = 15, C = 5

A = 16, C = 4

A = 17, C = 3

A = 18, C = 2

A = 19, C = 1

These sets don't work:

A = 12, C = 8 (not allowed, C must be <7)

A = 13, C = 7 (no, C must be <7)