

The Mystery of the Secret Santa **Answers**

Clue 1: Compare the Fractions and Mixed Numbers

Use a $<$, $>$ or $=$ symbol to make each statement true. Then, count how many of each symbol you have used to reveal a clue about the age of the Secret Santa.

If there are more $>$ symbols, the Secret Santa's age is a multiple of 5.

If there are more $=$ symbols, the Secret Santa's age is an even number.

If there are more $<$ symbols, the Secret Santa's age is an odd number.

$$\frac{1}{3} \quad = \quad \frac{6}{18}$$

$$\frac{6}{10} \quad < \quad \frac{3}{4}$$

$$\frac{10}{6} \quad > \quad 1\frac{1}{3}$$

$$\frac{5}{8} \quad < \quad \frac{4}{6}$$

$$1\frac{1}{10} \quad = \quad \frac{110}{100}$$

$$\frac{14}{5} \quad < \quad 3\frac{1}{10}$$

$$\frac{4}{6} \quad = \quad \frac{16}{24}$$

$$\frac{4}{7} \quad < \quad \frac{3}{5}$$

$<$	$=$	$>$
4	3	1

Clue 1: The Secret Santa's age is **an odd number**.

Clue 2: Simplifying Fractions

Match each fraction in the table to its simplified form above. Then, rearrange the words on the remaining fraction cards to spell out the next clue to reveal information about the relationship between Noel and the Secret Santa.

$\frac{1}{4}$ has	$\frac{1}{2}$ is	$\frac{2}{7}$ family	$\frac{1}{6}$ Noel's
$\frac{3}{5}$ colleague	$\frac{3}{10}$ friend	$\frac{5}{8}$ got	
$\frac{1}{3}$ a	$\frac{7}{10}$ not	$\frac{4}{9}$ neighbour	$\frac{2}{5}$ their

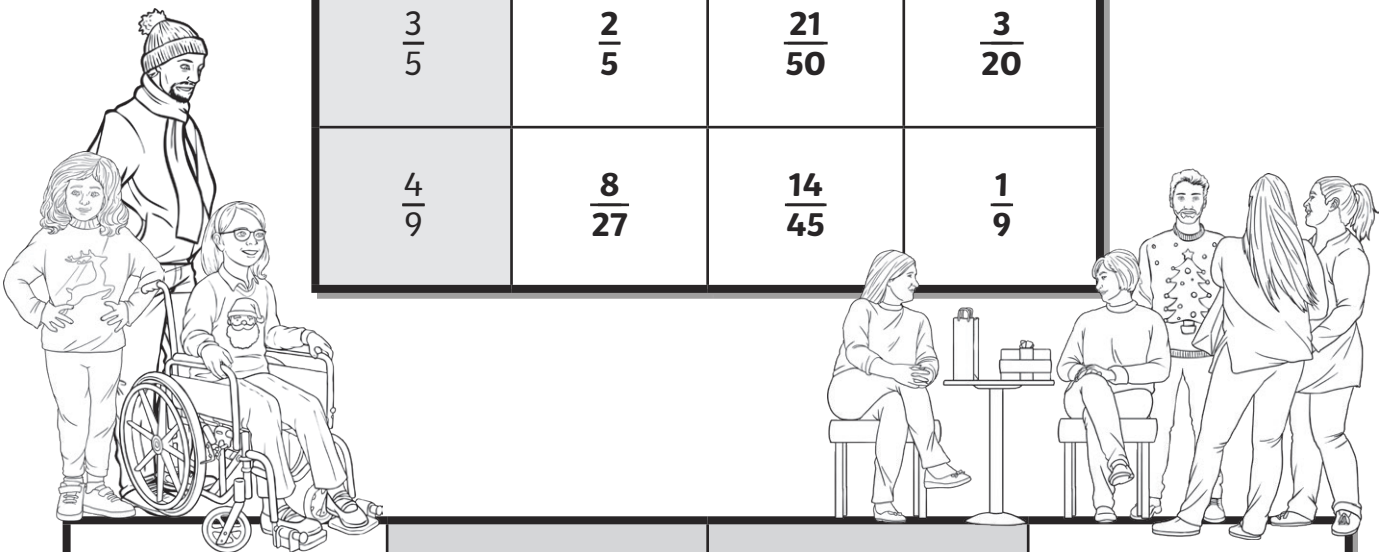
$\frac{14}{35} = \frac{2}{5}$	$\frac{8}{32} = \frac{1}{4}$	$\frac{25}{40} = \frac{5}{8}$	$\frac{36}{60} = \frac{3}{5}$
$\frac{11}{66} = \frac{1}{6}$	$\frac{63}{90} = \frac{7}{10}$	$\frac{16}{56} = \frac{2}{7}$	Remaining Words is friend a neighbour

Clue 2: The Secret Santa **is a neighbour** or **friend**.

Clue 3: Multiplication Grid

Multiply the fractions in the multiplication grid and write each answer in the simplest form. Then, match each answer to the corresponding word in the table below. Rearrange the words to spell out the next clue and reveal the eye colour of the Secret Santa.

x	$\frac{2}{3}$	$\frac{7}{10}$	$\frac{1}{4}$
$\frac{3}{5}$	$\frac{2}{5}$	$\frac{21}{50}$	$\frac{3}{20}$
$\frac{4}{9}$	$\frac{8}{27}$	$\frac{14}{45}$	$\frac{1}{9}$



$\frac{4}{36}$ blue	$\frac{8}{27}$ Secret	$\frac{14}{45}$ the	$\frac{6}{15}$ Noel's
$\frac{6}{12}$ they are	$\frac{10}{15}$ not	$\frac{1}{9}$ brown	$\frac{1}{5}$ colour
$\frac{2}{5}$ eyes	$\frac{28}{90}$ hazel	$\frac{21}{50}$ are	$\frac{3}{20}$ Santa's

Clue 3: **The Secret Santa's eyes are brown.**

Clue 4: True or False?

Identify whether each mathematical statement is true or false and tick the correct column. Each answer is given in its simplest form.

If there are more true answers, the Secret Santa is wearing Christmas pyjamas.

If there are more false answers, the Secret Santa is wearing Christmas socks.



	True	False
$\frac{2}{8} + \frac{5}{2} + \frac{9}{4} = 5$	✓	
$3\frac{4}{10} - \frac{8}{3} = \frac{11}{15}$	✓	
$\frac{7}{9} - \frac{3}{11} = \frac{74}{99}$		✓
$\frac{10}{8} + 1\frac{6}{7} = \frac{23}{56}$		✓
$\frac{55}{100} - \frac{2}{5} = \frac{53}{95}$		✓
$2\frac{1}{12} = \frac{14}{12} + \frac{4}{6} + \frac{1}{4}$	✓	
$\frac{84}{24} - 3\frac{1}{3} = 2$		✓
Total	3	4



Clue 4: The Secret Santa is wearing Christmas **socks**.

Clue 5: Ordering Fractions

Order each group of fractions order from smallest to greatest. Then, add the fractions highlighted together and write the answer in its simplest form. Match the answer to a word to reveal the favourite Christmas food of the Secret Santa.




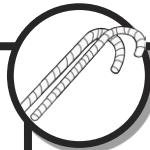
$\frac{2}{3}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{7}{4}$	$\frac{4}{3}$
1	2	3	4	7
2	3	4	3	4
smallest		greatest		

$\frac{8}{10}$	$\frac{11}{8}$	$\frac{15}{4}$	$\frac{4}{10}$	$\frac{9}{4}$
4	8	11	9	15
10	10	8	4	4
smallest		greatest		

$\frac{4}{6}$	$\frac{3}{7}$	$\frac{10}{3}$	$\frac{5}{3}$	$\frac{9}{7}$
3	4	9	5	10
7	6	7	3	3
smallest		greatest		

$\frac{7}{10}$	$\frac{7}{5}$	$\frac{6}{9}$	$\frac{11}{9}$	$\frac{4}{10}$
4	6	7	11	7
10	9	10	9	5
smallest		greatest		

$$\frac{4}{3} + \frac{8}{10} + \frac{4}{6} + \frac{7}{10} = \frac{210}{60}$$

			
$\frac{7}{2}$	$\frac{42}{30}$	$\frac{22}{6}$	$\frac{35}{10}$
turkey	gingerbread	mince pies	candy cane

Clue 5: The Secret Santa's favourite Christmas food is **turkey**.

The Secret Santa is **Senan**.