

# Year 6 Fractions and Percentages: Crack the Christmas Codes



Using the code below, can you solve the problems to find words associated with Christmas?



<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>
1	2	3	4	5	6	7	8	9	10	11	12	13

<b>N</b>	<b>O</b>	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>U</b>	<b>V</b>	<b>W</b>	<b>X</b>	<b>Y</b>	<b>Z</b>
14	15	16	17	18	19	20	21	22	23	24	25	26

1. Solve the fractions calculations and then simplify your answer to its lowest terms.

To find the code letter, you will need to look at either the numerator or the denominator, e.g.

$$\frac{1}{2} + \frac{1}{6} = \text{___} \text{ (numerator)} \text{ The answer simplified to its lowest terms is } \frac{2}{3} = \mathbf{B}$$

**OR**

$$\frac{3}{4} \div 5 = \text{___} \text{ (denominator)} \text{ The answer is } \frac{3}{20}, \text{ which can't be simplified so the answer is } \frac{3}{20} = \mathbf{T}$$

	<b>Question</b>	<b>Answer</b>	<b>Code Letter</b>
<b>a</b>	$\frac{6}{8} \times \frac{3}{4} = \text{___} \text{ (denominator)}$		
<b>b</b>	$\frac{4}{5} \times \frac{9}{10} = \text{___} \text{ (numerator)}$		
<b>c</b>	$\frac{1}{6} + \frac{1}{4} = \text{___} \text{ (numerator)}$		
<b>d</b>	$\frac{5}{10} + \frac{9}{20} = \text{___} \text{ (numerator)}$		
<b>e</b>	$\frac{11}{20} + \frac{5}{20} = \text{___} \text{ (denominator)}$		
<b>f</b>	$\frac{3}{7} \div 2 = \text{___} \text{ (denominator)}$		
<b>g</b>	$\frac{2}{5} + \frac{1}{4} = \text{___} \text{ (denominator)}$		

2. Solve these percentages and fractions problems to find the Christmas word.

	Question	Answer	Code Letter
<b>a</b>	5% of 380		
<b>b</b>	60% of 20		
<b>c</b>	50% of $\frac{1}{2}$ of 20		
<b>d</b>	25% of $\frac{1}{2}$ of 72		
<b>e</b>	20% of 35		
<b>f</b>	$\frac{1}{4}$ of 10% of 320		



3. Solve these different problems to find the Christmas word and then simplify your answer to its lowest terms.

	Question	Answer	Code Letter
<b>a</b>	$1 \frac{1}{8} \times \frac{2}{4} =$ _____ (denominator)		
<b>b</b>	$\frac{1}{7} \div 3 =$ _____ (denominator)		
<b>c</b>	$\frac{4}{10} \times 2 =$ _____ (numerator)		
<b>d</b>	$\frac{1}{4} + \frac{6}{12} =$ _____ (denominator)		
<b>e</b>	$\frac{2}{3} \div 6 =$ _____ (denominator)		
<b>f</b>	$\frac{5}{7} \times \frac{2}{4} =$ _____ (denominator)		
<b>g</b>	$\frac{2}{4} + \frac{3}{8} =$ _____ (numerator)		

# Crack the Christmas Codes Answers

1.

	Question	Answer	Code Letter
<b>a</b>	$\frac{6}{8} \times \frac{3}{4} =$ _____ (denominator)	$\frac{9}{16}$	<b>P</b>
<b>b</b>	$\frac{4}{5} \times \frac{9}{10} =$ _____ (numerator)	$\frac{18}{25}$	<b>R</b>
<b>c</b>	$\frac{1}{6} + \frac{1}{4} =$ _____ (numerator)	$\frac{5}{12}$	<b>E</b>
<b>d</b>	$\frac{5}{10} + \frac{9}{20} =$ _____ (numerator)	$\frac{19}{20}$	<b>S</b>
<b>e</b>	$\frac{11}{20} + \frac{5}{20} =$ _____ (denominator)	$\frac{4}{5}$	<b>E</b>
<b>f</b>	$\frac{3}{7} \div 2 =$ _____ (denominator)	$\frac{3}{14}$	<b>N</b>
<b>g</b>	$\frac{2}{5} + \frac{1}{4} =$ _____ (denominator)	$\frac{13}{20}$	<b>T</b>

2.

	Question	Answer	Code Letter
<b>a</b>	5% of 380	<b>19</b>	<b>S</b>
<b>b</b>	60% of 20	<b>12</b>	<b>L</b>
<b>c</b>	50% of $\frac{1}{2}$ of 20	<b>5</b>	<b>E</b>
<b>d</b>	25% of $\frac{1}{2}$ of 72	<b>9</b>	<b>I</b>
<b>e</b>	20% of 35	<b>7</b>	<b>G</b>
<b>f</b>	$\frac{1}{4}$ of 10% of 320	<b>8</b>	<b>H</b>

# Crack the Christmas Codes **Answers**

3.

	Question	Answer	Code Letter
<b>a</b>	$1\frac{1}{8} \times \frac{2}{4} =$ _____ (denominator)	$\frac{9}{16}$	<b>P</b>
<b>b</b>	$\frac{1}{7} \div 3 =$ _____ (denominator)	$\frac{1}{21}$	<b>U</b>
<b>c</b>	$\frac{4}{10} \times 2 =$ _____ (numerator)	$\frac{4}{5}$	<b>D</b>
<b>d</b>	$\frac{1}{4} + \frac{6}{12} =$ _____ (denominator)	$\frac{3}{4}$	<b>D</b>
<b>e</b>	$\frac{2}{3} \div 6 =$ _____ (denominator)	$\frac{1}{9}$	<b>I</b>
<b>f</b>	$\frac{5}{7} \times \frac{2}{4} =$ _____ (denominator)	$\frac{5}{14}$	<b>N</b>
<b>g</b>	$\frac{2}{4} + \frac{3}{8} =$ _____ (numerator)	$\frac{7}{8}$	<b>G</b>