

Year 5 Reasoning & Problem-Solving Examples

Match each number to a description.
Each number can be matched with more than one description.

$$\frac{1}{3}$$

$$\frac{9}{2}$$

$$2\frac{8}{3}$$

$$\frac{4}{7}$$

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

Non-unit fraction

Unit fraction

Improper fraction

Proper fraction

Less than 1

Mixed number

Greater than 1

Incorrectly written

Sam and Eva find out that $\frac{18}{48}$ is equivalent to $\frac{3}{8}$

Here are Sam's workings.

$$\frac{18}{48} \xrightarrow{+2} \frac{9}{24} \xrightarrow{+3} \frac{3}{8}$$

Here are Eva's workings.

$$\frac{18}{48} \xrightarrow{\div 6} \frac{3}{8}$$

Whose method is more efficient?

Explain your answer.

Show that $\frac{60}{144}$ is equivalent to $\frac{5}{12}$

Are the statements true or false?

$$\frac{1}{2} = \frac{10}{20}$$

$$\frac{1}{3} = \frac{15}{30}$$

$$\frac{1}{4} = \frac{40}{400}$$

$$\frac{1}{5} = \frac{20}{100}$$

$$\frac{1}{6} = \frac{12}{66}$$

$$\frac{1}{7} = \frac{4}{10}$$

Explain your answers.

Sort all the prime numbers between 10 and 100 into the table.

Number of ones			
1	3	7	9

Why do no 2-digit prime numbers have 0, 2, 4, 6 or 8 ones?

Why do no 2-digit prime numbers have 5 ones?

Rosie is thinking of a number less than 100



My number
is a cube number and
a square number.

What number could Rosie be thinking of?

Is there more than one possible answer?

Tiny is working out $600 \div 25$

Here are Tiny's workings.

$$600 \div 25$$

$$600 \div 2 = 300$$

$$300 \div 5 = 60$$

$$600 \div 25 = 60$$



Explain why Tiny is incorrect.

Find the correct answer.