

Mathematical Mayhem

We first worked out which equation is true or false.

$3 \frac{1}{2} - 2$ and $3 \frac{1}{2} \div 2$ false

$5 \frac{1}{2} - 4$ and $5 \frac{1}{2} \div 4$ false

$5 \frac{1}{3} - 4$ and $5 \frac{1}{3} \div 4$ true

$6 \frac{1}{7} - 5$ and $6 \frac{1}{7} \div 5$ false

$7 \frac{1}{5} - 6$ and $7 \frac{1}{5} \div 6$ true

We then studied them to find patterns. Agatha thought that "the rule was that when an odd denominator is subtracted by an odd number and vice versa, they would work." We tried this rule with other equations, but we found it didn't always work. eg. $3 \frac{1}{7} - 2$ and $3 \frac{1}{7} \div 2$.

"The pattern is when the denominator is a multiple of the number you are subtracting / dividing" said Kayla. Soon, we realised it was wrong.

Kayla thought that we should draw a table of true and false.

| TRUE | FALSE |
|--|--|
| $5 \frac{1}{3} - 4$ and $5 \frac{1}{3} \div 4$ | $3 \frac{1}{2} - 2$ and $3 \frac{1}{2} \div 2$ |
| $7 \frac{1}{5} - 6$ and $7 \frac{1}{5} \div 6$ | $5 \frac{1}{2} - 4$ and $5 \frac{1}{2} \div 4$ |
| | $6 \frac{1}{7} - 5$ and $6 \frac{1}{7} \div 5$ |

Using this method, Jasmine then realised that "In all the true calculations, the whole number in the fraction subtract two means that it will be true."

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