

AO1

**Context**

This task is most suitable for Intermediate and/or Higher candidates. It would normally follow on from work on sequences and fractions.

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## Fraction Differences

Ruth was investigating fraction differences.

She wrote down this sequence of fractions:

$$\frac{1}{1} \quad \frac{1}{2} \quad \frac{1}{3} \quad \frac{1}{4} \quad \frac{1}{5} \quad \frac{1}{6} \quad \dots \quad \dots$$

Then she worked out the differences between the consecutive fractions:

$$\frac{1}{2} \quad \frac{1}{6} \quad \frac{1}{12} \quad \frac{1}{20} \quad \frac{1}{30} \quad \dots \quad \dots$$

Then she worked out the differences between the fractions in her second series:

$$\frac{1}{3} \quad \frac{1}{12} \quad \dots \quad \dots$$

Investigate further.