

Thinking about fractions

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- To understand equality / inequality of fractions.
- To understand when the fraction's decimal terminates.
- To find fractions with specific properties.
- To know that there are numbers that are not fractions.

Exercise.

Find two fractions so that their product is less than their sum.

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Can we say something much more?

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Find a fraction which is equal to its reciprocal.

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Find two different fractions whose numerator is 1 such that their sum is maximum.

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Find a fraction that can be expressed as a repeating decimal, but whose reciprocal terminates.

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Find a simplified fraction (in reduced form) so that both the fraction and its reciprocal have terminating decimals.

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Can we classify all fractions with numerator 1 which have a terminating decimal?

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Find two proper fractions so that their sum, difference, product and quotient are between 0 and 1.

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Find three simplified fractions so that their sum is 1. (fractions need not be different)

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Is there more than one solution? How many solutions are there?

Exercise.

Are non recurring and non-terminating decimals fractions? If not, what are they?

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Exercise.

Find

$$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots$$

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