Discrete Mathematics

Repeating Decimals

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Repeating Decimals

Showing all your working, express the repeating decimal

$$0.6363...$$

as a fraction in its simplest form.

Repeating Decimals

- Let $x = 0.6363....$
- Multiply by 10

$$10x = 6.3636..$$

- Multiply by 100

$$100x = 63.6363...$$

Repeating Decimals

- (Last Slide : $100x = 63.6363...$)
- Remember $x = 0.6363....$

$$100x = 63 + x$$

- Re-arrange algebraically

$$99x = 63$$

- Divide both sides

$$x = 63/99$$

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