

Recurring Decimals \rightarrow Fractions

Ex 1 $0.5\dot{7} = 0.57777\dots$

Let $x = 0.57777\dots$

$10x = 5.77777\dots$ (1)

$100x = 57.7777\dots$ (2)

(2) - (1)

$90x = 52$

$x = \frac{52}{90} = \frac{26}{45}$

Ex 2 $0.\dot{6}\dot{1} = 0.616161\dots$

Let $x = 0.616161\dots$

$100x = 61.616161\dots$

$99x = 61$

$x = \frac{61}{99}$

Ex 3 $0.\dot{3}\dot{4}\dot{5} = 0.345345345\dots$

$x = 0.345345\dots$

$1000x = 345.345\dots$

$$999x = 345$$

$$x = \frac{345}{999} = \frac{115}{333}$$

Ex 4

$$0.23\dot{7}\dot{4}$$

$$x = 0.23747474 \dots$$

$$100x = 23.747474 \dots$$

$$10000x = 2374.7474 \dots$$

$$9900x = 2351$$

$$x = \frac{2351}{9900}$$

Exercise

$$1) 0.\dot{4} = \frac{4}{9}$$

$$2) 0.\dot{5}3\dot{1} = \frac{177}{333} = \frac{59}{111}$$

$$3) 0.76\dot{4} \quad \begin{aligned} x &= 0.76444\dots \\ 100x &= 76.4444\dots \\ 1000x &= 764.4444\dots \end{aligned}$$

$$900x = 688$$

$$x = \frac{688}{900} = \frac{172}{225}$$

$$4) \quad 0.\dot{1}2\dot{3} \quad \frac{41}{333}$$

$$5) \quad 0.\dot{7}\dot{6} \quad \frac{76}{99}$$

$$6) \quad 0.\dot{2}\dot{1}\dot{3} \quad \frac{211}{990}$$

$$7) \quad 0.\dot{5}\dot{3} \quad \frac{8}{15}$$

Homework

Email Mr Smith

Which tier do you think you should enter in June? Higher, Foundation, Don't know

Which tier in Feb next

Higher, Foundation
