

a)
Write $0.\dot{5}$ as a fraction in its simplest form.

Let the recurring decimal be equal to x	$x = 0.\dot{5} = 0.5555555555 \dots$
Multiply x to make an equal decimal part	$10x = 5.\dot{5} = 5.5555555555 \dots$
Subtract the smaller value from the larger	$\begin{array}{r} 10x = 5.5555555555 \dots \\ x = 0.5555555555 \dots \\ \hline 9x = 5 \end{array}$
Rearrange to find the value of x	$x = \frac{5}{9}$

b)
Write $0.\dot{5}\dot{4}$ as a fraction in its simplest form.

Let the recurring decimal be equal to x	$x = 0.\dot{5}\dot{4} = 0.5454545454 \dots$
Multiply x to make an equal decimal part	$10x = 5.\dot{4}\dot{5} = 5.4545454545 \dots$ $100x = 54.\dot{5}\dot{4} = 54.5454545454 \dots$
Subtract the smaller value from the larger	$\begin{array}{r} 100x = 54.5454545454 \dots \\ x = 0.5454545454 \dots \\ \hline 99x = 54 \end{array}$
Rearrange to find the value of x	

c)
Write $0.5\dot{4}$ as a fraction in its simplest form.

Let the recurring decimal be equal to x	$x = 0.5\dot{4} = 0.5444444444 \dots$
Multiply x to make an equal decimal part	$10x = 5.\dot{4} = 5.4444444444 \dots$ $100x = 54.\dot{4} = 54.4444444444 \dots$
Subtract the smaller value from the larger	
Rearrange to find the value of x	

d)
Write $0.\dot{4}\dot{2}$ as a fraction in its simplest form.

Let the recurring decimal be equal to x	$x = 0.\dot{4}\dot{2} = 0.4242424242 \dots$
Multiply x to make an equal decimal part	$10x = 4.\dot{2}\dot{4} = 4.2424242424 \dots$ $100x = 42.\dot{4}\dot{2} = 42.4242424242 \dots$
Subtract the smaller value from the larger	
Rearrange to find the value of x	