Recurring decimals to fractions

Exit ticket ANSWERS Name _____

1. Write $0.\dot{5}$ as a fraction.

$\frac{5}{9}$

2. Write $0.\dot{1}\dot{8}$ as a fraction in its simplest form.

$\frac{2}{11}$

3. Sam says $0.\dot{4}\dot{5} = \frac{45}{100}$. Is Sam right?
Explain how you know.

No: $\frac{45}{99} = \frac{5}{11}$

The Maths Habit

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NEXT LESSON

1 **Write $0.\dot{5}$ as a fraction.**

$\frac{5}{9}$

TESTS — One recurring digit to a fraction (10x)

LOOK FOR

$\frac{5}{10}$ $\frac{5}{10} = 0.5$, which stops: $10x - x = 9x = 5$

$\frac{5}{99}$ one digit recurs: multiply by 10, not 100

FIX IT

Write $0.\dot{8}$ as a fraction. $\frac{8}{9}$

2 **Write $0.\dot{1}\dot{8}$ as a fraction in its simplest form.**

$\frac{2}{11}$

TESTS — Two recurring digits to a fraction (100x), simplified

LOOK FOR

$\frac{18}{100}$ that is 0.18, which stops: $100x - x = 99x = 18$

$\frac{18}{99}$ right, but not in its simplest form: divide both by 9

FIX IT

Write $0.\dot{5}\dot{4}$ as a fraction in its simplest form. $\frac{6}{11}$

3 **Sam says $0.\dot{4}\dot{5} = \frac{45}{100}$. Is Sam right? Explain how you know.**

No: $\frac{45}{99} = \frac{5}{11}$

TESTS — Why a recurring decimal is not over 100

LOOK FOR

Yes $\frac{45}{100} = 0.45$, which stops

No: $\frac{4}{9}$ two digits recur, so $100x$: $\frac{4}{9}$ is 0.444…

FIX IT

Is $0.\dot{3}\dot{6} = \frac{36}{100}$? Explain how you know. No: $\frac{36}{99} = \frac{4}{11}$