Recurring decimals to fractions

ANSWERS

1

Write $0.\dot{4}$ as a fraction.

$10x = 4.444444...$

$x = 0.444444...$

$9x = 4$

$x = \frac{4}{9}$

Answer $\frac{4}{9}$

2

Write $0.\dot{7}$ as a fraction.

$10x = 7.777777...$

$x = 0.777777...$

$9x = 7$

$x = \frac{7}{9}$

Answer $\frac{7}{9}$

3

Write $0.\dot{2}$ as a fraction.

$x = 0.222222...$

$10x = 2.222222...$

$9x = 2$

$x = \frac{2}{9}$

Answer $\frac{2}{9}$

4

Write $0.\dot{3}$ as a fraction in its simplest form.

$x = 0.333333...$

$10x = 3.333333...$

$9x = 3$

$x = \frac{3}{9} = \frac{1}{3}$

Answer $\frac{1}{3}$

5

Write $0.\dot{2}\dot{7}$ as a fraction in its simplest form.

$100x = 27.272727...$

$x = 0.272727...$

$99x = 27$

$x = \frac{27}{99} = \frac{3}{11}$

Answer $\frac{3}{11}$

6

Write $0.\dot{1}\dot{4}$ as a fraction.

$100x = 14.141414...$

$x = 0.141414...$

$99x = 14$

$x = \frac{14}{99}$

Answer $\frac{14}{99}$

7

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

$x = 0.454545...$

$100x = 45.454545...$

$99x = 45$

$x = \frac{45}{99} = \frac{5}{11}$

Answer $\frac{5}{11}$

8

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

$x = 0.060606...$

$100x = 6.060606...$

$99x = 6$

$x = \frac{6}{99} = \frac{2}{33}$

Answer $\frac{2}{33}$

Recurring decimals to fractions *further practice*

ANSWERS

9

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

$10x - x = 9x = 5$

Answer $\frac{5}{9}$

10

Write $0.\dot{6}\dot{3}$ as a fraction in its simplest form.

$100x - x = 99x = 63$

$x = \frac{63}{99} = \frac{7}{11}$

Answer $\frac{7}{11}$

11

Write $1.\dot{4}$ as a fraction.

$x = 1.444..., 10x = 14.444...$

$9x = 13$

Answer $\frac{13}{9} = 1\frac{4}{9}$

12

Leo says $0.\dot{5} = \frac{5}{10}$. Use the method to show that Leo is wrong.

$\frac{5}{10} = 0.5$, but $0.555...$ goes on

$10x - x = 9x = 5$

Answer $\frac{5}{9}$

13

Which is bigger, $0.\dot{2}\dot{7}$ or 0.27? Explain how you know.

$0.272727...$ is more than $0.270000...$

Answer $0.\dot{2}\dot{7}$

14

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

$100x = 218.1818..., x = 2.1818...$

$99x = 216, x = \frac{216}{99} = \frac{24}{11}$

Answer $\frac{24}{11} = 2\frac{2}{11}$

15

Write $0.\dot{1}3\dot{5}$ as a fraction in its simplest form.

three digits recur:

$1000x - x = 999x = 135$

$x = \frac{135}{999} = \frac{5}{37}$

Answer $\frac{5}{37}$

16

Mia says $0.\dot{1}\dot{2} = \frac{12}{100}$.

Explain her mistake and write it as a fraction in its simplest form.

$\frac{12}{100} = 0.12$, which stops

$99x = 12, x = \frac{12}{99} = \frac{4}{33}$

Answer $\frac{4}{33}$