

**RECURRING DECIMALS - PRACTICE QUESTIONS
NON-CALCULATOR**



metatutor

1.

Put the following numbers into order, smallest to largest.

0.3 $\dot{4}$

0.3

0.4

0.3 $\dot{5}$

0.3444...

0.3000...

0.4000...

2. 0.3555...

0.3, 0.34, 0.35, 0.4

Put the following numbers into order, smallest to largest.

0.4 $\dot{7}$

0. $\dot{4}7$

0.47

0. $\dot{4}$

0.4777...

0.4747...

0.4700...

0.4444...

0. $\dot{4}$, 0.47, 0. $\dot{4}7$, 0.4 $\dot{7}$

3.

Put the following numbers into order, smallest to largest.

0.19 $\dot{7}$

0.19

0.1 $\dot{7}$

0.19

0.197197...

0.191919...

0.171717...

0.190000...

0.1 $\dot{7}$, 0.19, 0.19, 0.19 $\dot{7}$

4.

Put the following numbers into order, smallest to largest.

0.38

0. $\dot{3}8$

0.338

0. $\dot{3}88$

0.388888...

0.383838...

0.338338...

0.388388...

0.338, 0. $\dot{3}8$, 0. $\dot{3}88$, 0.38

5.

Put the following numbers into order, smallest to largest.

0.25

0.25 $\dot{2}$

0.2 $\dot{5}$

0.25 $\dot{2}$

0.252525...

0.252252...

0.255555...

0.252222...

0.252, 0.25 $\dot{2}$, 0.2 $\dot{5}$, 0.25 $\dot{2}$

6.

Write 0.4 as a fully simplified fraction.

$$\begin{aligned}x &= 0.4 \\10x &= 4.4 \\10x - x &= 4 \\9x &= 4 \\x &= \frac{4}{9}\end{aligned}$$

$$\left(\frac{4}{9}\right)$$

7.

Write 0.7 as a fully simplified fraction.

$$\begin{aligned}x &= 0.7 \\10x &= 7.7 \\10x - x &= 7 \\9x &= 7 \\x &= \frac{7}{9}\end{aligned}$$

$$\left(\frac{7}{9}\right)$$

8.

Write 0.12 as a fully simplified fraction.

$$\begin{aligned}x &= 0.12 \\100x &= 12.12 \\100x - x &= 12 \\99x &= 12 \\x &= \frac{12}{99} = \frac{4}{33}\end{aligned}$$

$$\left(\frac{4}{33}\right)$$

9.

Write 0.85 as a fully simplified fraction.

$$\begin{aligned}x &= 0.85 \\100x &= 85.85 \\100x - x &= 85 \\99x &= 85 \\x &= \frac{85}{99}\end{aligned}$$

$$\left(\frac{85}{99}\right)$$

10.

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

$$\begin{aligned}x &= 0.\dot{1}0\dot{4} \\ 1000x &= 104.\dot{1}0\dot{4} \\ 1000x - x &= 104 \\ 999x &= 104 \\ x &= \frac{104}{999}\end{aligned}$$

$$\frac{104}{999}$$

11.

Write $0.\dot{9}3\dot{6}$ as a fully simplified fraction.

$$\begin{aligned}x &= 0.\dot{9}3\dot{6} \\ 1000x &= 936.\dot{9}3\dot{6} \\ 1000x - x &= 936 \\ 999x &= 936 \\ x &= \frac{936}{999} = \frac{312}{333} = \frac{104}{111}\end{aligned}$$

$$\frac{104}{111}$$

12.

Write $0.\dot{4}7$ as a fully simplified fraction.

$$\begin{aligned}x &= 0.\dot{4}7 \\ 100x &= 47.\dot{4}7 \\ 100x - x &= 47 \\ 99x &= 47 \\ x &= \frac{47}{99}\end{aligned}$$

$$\frac{47}{99}$$

13.

Write $0.\dot{1}6\dot{2}$ as a fully simplified fraction.

$$\begin{aligned}x &= 0.\dot{1}6\dot{2} \\ 1000x &= 162.\dot{1}6\dot{2} \\ 1000x - x &= 162 \\ 999x &= 162 \\ x &= \frac{162}{999} = \frac{54}{333} = \frac{18}{111} = \frac{6}{37}\end{aligned}$$

$$\frac{6}{37}$$

14.

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

$$\begin{aligned}x &= 0.\dot{1} \\10x &= 1.\dot{1} \\10x - x &= 1 \\9x &= 1 \\x &= \frac{1}{9}\end{aligned}$$

$$\frac{1}{9}$$

15.

Write $0.\dot{6}\dot{7}$ as a fully simplified fraction.

$$\begin{aligned}x &= 0.\dot{6}\dot{7} \\100x &= 67.\dot{6}\dot{7} \\100x - x &= 67 \\99x &= 67 \\x &= \frac{67}{99}\end{aligned}$$

$$\frac{67}{99}$$

16.

Write $0.\dot{2}1\dot{6}$ as a fully simplified fraction.

$$\begin{aligned}x &= 0.\dot{2}1\dot{6} \\1000x &= 216.\dot{2}1\dot{6} \\1000x - x &= 216 \\999x &= 216 \\x &= \frac{216}{999} = \frac{72}{333} = \frac{24}{111} = \frac{8}{37}\end{aligned}$$

$$\frac{8}{37}$$

17.

Write $0.\dot{2}3\dot{1}$ as a fully simplified fraction.

$$\begin{aligned}x &= 0.\dot{2}3\dot{1} \\1000x &= 231.\dot{2}3\dot{1} \\1000x - x &= 231 \\999x &= 231 \\x &= \frac{231}{999} = \frac{77}{333}\end{aligned}$$

$$\frac{77}{333}$$

18.

Write 0.26 as a fully simplified fraction.

$$\begin{aligned}x &= 0.2\dot{6} \\10x &= 2.\dot{6} \\100x &= 26.\dot{6} \\100x - 10x &= 24 \\90x &= 24 \\x &= \frac{24}{90} = \frac{8}{30} = \frac{4}{15}\end{aligned}$$

$$\frac{4}{15}$$

19.

Write 0.81 as a fully simplified fraction.

$$\begin{aligned}x &= 0.8\dot{1} \\10x &= 8.\dot{1} \\100x &= 81.\dot{1} \\100x - 10x &= 73 \\90x &= 73 \\x &= \frac{73}{90}\end{aligned}$$

$$\frac{73}{90}$$

20.

Write 0.975 as a fully simplified fraction.

$$\begin{aligned}x &= 0.97\dot{5} \\10x &= 9.7\dot{5} \\1000x &= 975.\dot{5} \\1000x - 10x &= 966 \\990x &= 966 \\x &= \frac{966}{990} = \frac{322}{330} = \frac{161}{165}\end{aligned}$$

$$\frac{161}{165}$$

21.

Write 0.180 as a fully simplified fraction.

$$\begin{aligned}x &= 0.18\dot{0} \\10x &= 1.8\dot{0} \\1000x &= 180.\dot{0} \\1000x - 10x &= 179 \\990x &= 179 \\x &= \frac{179}{990}\end{aligned}$$

$$\frac{179}{990}$$

22.

Write 0.4354 as a fully simplified fraction.

$$\begin{aligned}
 x &= 0.43\dot{5}4 \\
 100x &= 43.\dot{5}4 \\
 10000x &= 4354.\dot{5}4 \\
 10000x - 100x &= 4311 \\
 9900x &= 4311 \\
 x &= \frac{4311}{9900} = \frac{1437}{3300} = \frac{479}{1100}
 \end{aligned}$$

$$3 \overline{) 1437}$$

$$3 \overline{) 0479}$$

$$\frac{479}{1100}$$

23.

Write 0.8328 as a fully simplified fraction.

$$\begin{aligned}
 x &= 0.83\dot{2}8 \\
 10x &= 8.\dot{3}28 \\
 10000x &= 8328.\dot{3}28 \\
 10000x - 10x &= 8320 \\
 9990x &= 8320 \\
 x &= \frac{8320}{9990} = \frac{832}{999} = \frac{416}{495}
 \end{aligned}$$

$$\frac{832}{999}$$

24.

Write 1.19 as a fully simplified mixed number.

$$\begin{aligned}
 x &= 1.\dot{1}9 \\
 100x &= 119.\dot{1}9 \\
 100x - x &= 118 \\
 99x &= 118 \\
 x &= \frac{118}{99} = 1\frac{19}{99}
 \end{aligned}$$

$$1\frac{19}{99}$$

25.

Write 5.12 as a fully simplified mixed number.

$$\begin{aligned}
 x &= 5.\dot{1}2 \\
 10x &= 51.\dot{2} \\
 100x &= 512.\dot{2} \\
 90x &= 461 \\
 x &= \frac{461}{90} = 5\frac{11}{90}
 \end{aligned}$$

$$5\frac{11}{90}$$