

Name: _____

Exam Style Questions

Recurring Decimals



Corbettmaths

Ensure you have: Pencil, pen, ruler, protractor, pair of compasses and eraser

You may use tracing paper if needed

Guidance

1. Read each question carefully before you begin answering it.
2. Don't spend too long on one question.
3. Attempt every question.
4. Check your answers seem right.
5. Always show your workings

Revision for this topic

Secondary

Video 96

Video 127



1. Shown below are four fractions.

$$\frac{5}{8} \quad \left(\frac{1}{3}\right) \quad \left(\frac{2}{7}\right) \quad \frac{11}{20}$$

Circle any fractions which are recurring decimals.

(2)

2. Write the fraction below as a recurring decimal.

$$\frac{4}{7}$$

$$7 \overline{) 4.00000000} \begin{array}{l} 0.57142857 \dots \\ \underline{4 4} \\ 0 \\ \underline{ 0} \\ 0 \\ \underline{ 0} \\ 0 \\ \underline{ 0} \\ 0 \\ \underline{ 0} \\ 0 \end{array}$$

$$0.\overline{571428}$$

(2)

3. Write the fraction below as a recurring decimal.

$$\frac{3}{11}$$

$$11 \overline{) 3.00000000} \begin{array}{l} 0.272727 \\ \underline{3 0} \\ 0 \\ \underline{ 0} \\ 0 \\ \underline{ 0} \\ 0 \\ \underline{ 0} \\ 0 \\ \underline{ 0} \\ 0 \end{array}$$

$$0.\overline{27}$$

(2)

4. Write $0.\overline{81}$ as a fraction.
Give your answer in its simplest form.

$$x = 0.81818181 \dots$$

$$100x = 81.8181 \dots$$

$$99x = 81$$

$$x = \frac{81}{99}$$

$$\frac{9}{11}$$

(3)

5. Convert $0.3\overline{4}$ to a fraction.
Give your answer in its simplest form.

$$x = 0.34444 \dots$$

$$10x = 3.4444 \dots$$

$$100x = 34.4444 \dots$$

$$90x = 31$$

$$\frac{31}{90}$$

(3)

6. Write $0.5\overline{12}$ as a fraction.
Give your answer in its simplest form.

$$x = 0.51212 \dots$$

$$10x = 5.1212 \dots$$

$$1000x = 512.1212 \dots$$

$$990x = 507$$

$$\frac{507}{990}$$

$$\frac{169}{330}$$

(3)

7. Convert $0.4515151\dots$ to a fraction.
Give your answer in its simplest form.

$$\begin{aligned}
 x &= 0.4515151\dots \\
 10x &= 4.515151\dots \\
 1000x &= 451.5151\dots \\
 990x &= 447
 \end{aligned}$$

$$\frac{447}{990}$$

$$\frac{149}{330}$$

(3)

8. Write $1.2\dot{4}$ as a mixed number.
Give your answer in its simplest form.

$$\begin{aligned}
 x &= 1.2444\dots \\
 10x &= 12.444\dots \\
 100x &= 124.444\dots \\
 90x &= 112
 \end{aligned}$$

$$x = \frac{112}{90}$$

$$\frac{56}{45} = 1\frac{11}{45}$$

$$1\frac{11}{45}$$

(3)

9. Write $2.1\dot{6}\dot{5}$ as a mixed number.
Give your answer in its simplest form.

$$\begin{aligned}
 x &= 2.1656565\dots \\
 10x &= 21.656565\dots \\
 1000x &= 2165.656565\dots \\
 990x &= 2144
 \end{aligned}$$

$$\frac{2144}{990} = \frac{1072}{495}$$

$$2\frac{82}{495}$$

(3)

10. Write the numbers below in order.
Start with the smallest.

$$\frac{11}{23}, \frac{26}{55}, \frac{598}{1265}, \frac{5}{11}, \frac{25}{55}, \frac{575}{1265}$$

$$\begin{aligned} x &= 0.4727272727... \\ 10x &= 4.7272727... \\ 1000x &= 472.7272727... \end{aligned}$$

$$\begin{aligned} 990x &= 468 \\ x &= \frac{468}{990} = \frac{26}{55} \end{aligned}$$

$$\frac{5}{11}, 0.4\dot{7}2, \frac{11}{23}$$

(3)