

Repeating Decimals to Fractions Homework

1) Which number is equivalent to the repeating decimal $0.\overline{242242242...}$?

- A $\frac{24}{100}$
- B $\frac{242}{999}$
- C $\frac{242}{1000}$
- D $\frac{2422}{9999}$

1) Identify digits repeating
 2) Are repeating digits directly after decimal? Yes!
 3) repeating #'s in numerator
 4) 9's in denominator
 * 3 9's because 3 digits repeat

2) Which of these is a rational number?

- A $\sqrt{254}$ - Not perfect square
- B $\frac{\sqrt{125}}{5}$ - Not perfect square
- C $-\frac{\sqrt{4}}{2} = -\frac{2}{2} = -1$
- D $-\sqrt{3}$ - Not perfect square

3) Which fraction is equivalent to $0.\overline{07}$?

- A $\frac{7}{100}$
- B $\frac{7}{99}$
- C $\frac{7}{90}$

$$\frac{07}{99} = \frac{7}{99}$$

4) Which fraction is equivalent to $0.\overline{15}$?

- A $\frac{5}{33}$
- B $\frac{3}{20}$
- C $\frac{1}{6}$

$$\frac{15}{99} \div 3 = \frac{5}{33}$$

5) Which number below is irrational?

- A $2.2.2$
 $\sqrt[3]{8} = 2$
- B $5.5.5$
 $\sqrt[3]{125} = 5$
- C 7.7
 $\sqrt{49} = 7$

D $\sqrt{52}$ - Not a perfect square

6) In which set(s) of numbers does the real number 0 belong?

- irrational only - non-terminating, non-repeating
- rational, whole, and natural \rightarrow counting #'s
- rational, integer, and natural \uparrow
- D rational, integer, and whole

7) Which fraction is equal to $0.\overline{5}$?

- A $\frac{11}{20}$
- B $\frac{9}{20}$
- C $\frac{5}{11}$

$$\frac{5}{9}$$

D $\frac{5}{9}$

8) Which fraction is equivalent to $3.\overline{33}$?

- A $\frac{10}{3}$
- B $\frac{36}{11}$
- C $\frac{333}{100}$
- D $\frac{91}{30}$

$$3 \frac{33}{99} \div 33 = 3 \frac{1}{3} = \frac{10}{3}$$

9) Convert $0.\overline{67}$ to a fraction reduced to lowest terms. Show your work.

$$\boxed{\frac{67}{99}} \leftarrow \begin{array}{l} \text{digits repeating} \\ \text{two 9's, because two digits repeat} \end{array}$$