

Algebra I

11-2

Decimal Forms of Rational Numbers

Rational Number - Any number that can be written as a fraction.

- 1) Terminating decimals.
- 2) Repeating

How do you change a fraction into a decimal?

Divide by the bottom.

$$\frac{1}{2} = 2 \overline{) 1.0} \\ \underline{10} \\ 0$$

Express each rational number as a terminating or repeating decimal. (pg 515)

1a) $\frac{2}{3} = 0.\overline{6}$

$$3 \overline{) 2.0} \\ \underline{18} \\ 2$$

1b) $\frac{9}{2} = 4.5$

$$2 \overline{) 9.0} \\ \underline{8} \\ 10$$

Express each rational number as a fraction in simplest form

19) $0.325 \rightarrow \frac{325}{1000} = \frac{13}{40}$

$\xrightarrow{\div 25}$
 $\xrightarrow{\div 25}$

How to change a repeating decimal to a fraction.

21) $0.\overline{4}$

1) Let x = the number	$x = 0.\overline{4}$
2) Count the digits beneath the bar.	$n = 1$
3) Multiply by 10^n , n = number of digits beneath the bar	$10^1 = 10$ $10(0.4\overline{4444})$ $10x = 4.\overline{4}$
4) Subtract and Solve	$\begin{array}{r} 10x = 4.\overline{4} \\ - x = 0.\overline{4} \\ \hline 9x = 4 \end{array}$ $\frac{9x}{9} = \frac{4}{9}$ <div style="border: 1px solid black; display: inline-block; padding: 2px;">$\frac{4}{9}$</div>

25) $0.\overline{07}$

1) Let x = the number	$x = 0.\overline{07}$
2) Count the digits beneath the bar.	$n = 2$
3) Multiply by 10^n , n = number of digits beneath the bar	$10^2 = 100$ $100(0.0\overline{70707})$ $100x = 7.\overline{07}$
4) Subtract and Solve	$\begin{array}{r} 100x = 7.\overline{07} \\ - x = 0.\overline{07} \\ \hline 99x = 7 \end{array}$ $\frac{99x}{99} = \frac{7}{99}$ <div style="border: 1px solid black; display: inline-block; padding: 2px;">$\frac{7}{99}$</div>

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2-30 even

You will need a calculator that can do Square Roots $\sqrt{\quad}$

by _____
(Date)

(If you are planning to take Geometry and Algebra II, you might want to consider investing in a scientific calculator, with \sin , \cos , and \tan buttons)