

Name:

Period:

Notes 2-2

Int 1

Terminating/Repeating Decimals

Unit 2

Terminating Decimal: A decimal that stops.

0.5

1.555

1.7623478

Repeating Decimal: A decimal with a pattern of numbers that repeats **FOREVER!**

0.333333...

0.123123123123...

0.456777777...

Ex. 1: Write each repeating decimal in correct bar notation.

A. 0.1111...

B. 0.61111...

C. 0.616161...

0. $\overline{1}$ 0. $\overline{61}$ 0. $\overline{61}$

Ex. 2: Complete the table below. Write fractions in simplest form.

Decimal	Words	Fraction
0.7	seven tenths	$\frac{7}{10}$
0.19	nineteen hundredths	$\frac{19}{100}$
0.105	one hundred and five thousandths	$\frac{105 \div 5}{1000 \div 5} = \frac{21}{200}$

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Write each fraction or mixed number as a decimal.

Ex. 3: $\frac{74}{100}$

0.74

Ex. 4: $\frac{7.5}{20.5} = \frac{35}{100}$

0.35

Ex. 5: $5\frac{3}{4}$

5.75

Ex. 6: $\frac{3}{10}$

0.3

Ex. 7: $\frac{3.4}{25.4} = \frac{12}{100}$

0.12

Ex. 8: $-6\frac{1}{2}$

-6.5

Ex. 9: Write $\frac{3}{8}$ as a decimal.

$$\begin{array}{r} \boxed{0.375} \\ 8 \overline{) 3.000} \\ \underline{-24} \downarrow \\ 60 \\ \underline{-56} \downarrow \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

Ex. 10: Write $-\frac{1}{40}$ as a decimal.

$$\begin{array}{r} \boxed{-0.025} \\ 40 \overline{) 1.0000} \\ \underline{-80} \downarrow \\ 200 \\ \underline{-200} \\ 0 \end{array}$$

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Write each fraction or mixed number as a decimal. Use bar notation if needed.

Ex. 11: $\frac{7}{9} = 0.\overline{7}$

$$\begin{array}{r} 0.777\dots \\ 9 \overline{) 7.0} \\ \underline{-63} \downarrow \\ 70 \\ \underline{-63} \downarrow \\ 70 \end{array}$$

Ex. 12: $-\frac{7}{8}$

$$\begin{array}{r} 0.875 \\ 8 \overline{) 7.0} \\ \underline{-64} \downarrow \\ 60 \\ \underline{-56} \downarrow \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

Ex. 13: $-\frac{3}{11} = -0.\overline{27}$

$$\begin{array}{r} 0.2727\dots \\ 11 \overline{) 3.0000} \\ \underline{-22} \downarrow \\ 80 \\ \underline{-77} \downarrow \\ 30 \\ \underline{-22} \downarrow \\ 80 \\ \underline{-77} \downarrow \\ 30 \end{array}$$

Ex. 14: $8\frac{1}{3} = 8.\overline{3}$

$$\begin{array}{r} 0.333\dots \\ 3 \overline{) 1.0} \\ \underline{-9} \downarrow \\ 10 \\ \underline{-9} \downarrow \\ 10 \end{array}$$

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Write the following decimals as a fraction (improper or mixed number) in simplest form.

Ex. 15: 3.4

$$3 \frac{4 \div 2}{10 \div 2} = 3 \frac{2}{5}$$

$$\boxed{3 \frac{2}{5}} = \frac{3 \cdot 5 + 2}{5} = \boxed{\frac{17}{5}}$$

Ex. 16: 5.05

$$5 \frac{5 \div 5}{100 \div 5} = 5 \frac{1}{20}$$

$$\boxed{5 \frac{1}{20}}$$

Ex. 17: -0.45

$$-\frac{45 \div 5}{100 \div 5} = \boxed{-\frac{9}{20}}$$

Ex. 18: Jamie had two hits on her first nine times at bat.

A. What fraction represents how many hits Jamie got? $\frac{2}{9}$

B. To find Jamie's batting average, turn that fraction into a decimal.

$$\begin{array}{r} 0.\overline{22} \\ 9 \overline{) 2.00} \\ \underline{-18} \\ 20 \\ \underline{-18} \\ 20 \end{array}$$

$$\boxed{0.\overline{2}}$$

Ex. 19: Write a fraction that is equivalent to a repeating decimal between 0.25 and 0.5.

0.333...

$$\boxed{\frac{1}{3}}$$