

Objective: TSWBAT divide decimals

Vocabulary

① Terminating decimal- a decimal that stops or terminates.

ex: 0.5, 1.25, 0.375, 25.10025

② Repeating decimal- a decimal that repeats the same digit or group of digits. A bar is drawn over the digits that repeat.

ex: 0.33333... is written $0.\overline{3}$

1.272727... is written $1.\overline{27}$

Entertainment Transportation and tickets to an amusement park cost \$364.20 for 12 friends.
How much will each person pay?

$$\begin{array}{r} 30.35 \\ 12 \overline{) 364.20} \\ \underline{-36} \\ 042 \\ \underline{-36} \\ 60 \\ \underline{-60} \\ 0 \end{array}$$

$$\boxed{\$ 30.35}$$

Find each quotient. Identify each as a terminating or repeating decimal.

① $62 \div 8$

② $5 \div 6$

2**EXAMPLE****Finding a Decimal Quotient**

Find each quotient. Identify each as a terminating or repeating decimal.

a. $62 \div 8$

$$\begin{array}{r} 7.75 \\ 8 \overline{)62.00} \\ \underline{-56} \\ 60 \\ \underline{-56} \\ 40 \\ \underline{-40} \\ 0 \end{array} \quad \leftarrow \text{Insert zeros when needed.}$$

Since 7.75 ends, 7.75 is a terminating decimal.

b. $5 \div 6$

$$\begin{array}{r} 0.833 \dots \\ 6 \overline{)5.000} \\ \underline{-48} \\ 20 \\ \underline{-18} \\ 20 \\ \underline{-18} \\ 2 \end{array} \quad \leftarrow \text{Insert zeros when needed.}$$

\leftarrow The subtraction $20 - 18$ will continue without end. So the digit 2 will keep repeating.

Since the 3 repeats, $0.8\overline{3}$ is a repeating decimal.

Key Concepts

Dividing Decimals

To divide a decimal by a decimal, multiply both the dividend and the divisor by the same number so that the divisor is a whole number.

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EXAMPLE

Dividing a Decimal by a Decimal



Recipes Alike uses 0.5 pound of strawberries in each smoothie. How many smoothies can Alike make with 2.25 pounds of strawberries?

$$0.5 \overline{)2.25}$$

(Two pink arrows point from the decimal point in the divisor to the decimal point in the dividend.)

Since the divisor has one decimal place, multiply the dividend and divisor by 10 so that the divisor is a whole number.

$$\begin{array}{r} 4.5 \\ 5 \overline{)22.5} \\ - 20 \\ \hline 25 \\ - 25 \\ \hline 0 \end{array}$$

← Now divide as with whole numbers. Place the decimal point in the quotient above the decimal point in the dividend.

Alike can make 4.5 smoothies.

Find each quotient.

13. $3 \div 0.12$ _____ 14. $1.5 \overline{)84}$ _____ 15. $78 \div 15.6$ _____
16. $6.4 \overline{)23.68}$ _____ 17. $7.28 \div 9.1$ _____ 18. $3 \overline{)4.11}$ _____
19. $0.9 \overline{)1.35}$ _____ 20. $0.5 \overline{)0.935}$ _____ 21. $1.9 \overline{)19.95}$ _____

Lined area for working out the solutions to the division problems.

Homework: p 45, 1-17

pp. 45-46, 23-28, 33-36, 39-44

A blank sheet of lined paper. On the left side, there is a vertical red line that serves as a margin. The rest of the page is filled with horizontal blue lines, spaced evenly, providing a guide for writing.