LESSON MAKER PRO

Decimal Detectives

Use long division to spot decimals that end or repeat.

GRADE 7 · 7.NS.A.2d

CCSS.Math.Content.7.NS.A.2d "Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats."

NAME _____ DATE _____

PART 1: PRACTICE RULE

Use long division to divide the numerator by the denominator. If the remainder becomes 0, the decimal terminates. If a remainder repeats, the digits repeat. Parentheses show the digit or block of digits that repeats.

WORKED EXAMPLE

Convert 9/25 to a decimal.

1. 25 is larger than 9, so write 0. and add zeros: 9.00.
2. 25 goes into 90 three times; 90 - 75 = 15.
3. Bring down 0: 150. 25 goes into 150 six times, remainder 0.

Answer: 0.36

PRACTICE 6 problems

1 Convert 1/8 to a decimal.

ANSWER _____

2 Convert -3/20 to a decimal.

ANSWER _____

3 Convert 5/12 to a decimal. Use parentheses for repeating digits.

ANSWER _____

4 Convert -1/6 to a decimal. Use parentheses for repeating digits.

ANSWER _____

5 Convert 13/40 to a decimal.

ANSWER _____

6 Convert 2/11 to a decimal. Use parentheses for repeating digits.

ANSWER _____

APPLY IT Show your work

1 A music app shows that 11/32 of a playlist has downloaded. Write this fraction as a decimal. Does the decimal terminate or repeat?

WORK SPACE

ANSWER _____

2 In a rhythm game, Jalen earned 5/18 of the points needed to unlock a new song. Write this fraction as a decimal. Which digit repeats?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Convert 11/30 to a decimal. Identify the nonrepeating digit and the repeating digit. Then explain why the decimal does not terminate.

WORK SPACE AND ANSWER

ANSWER KEY

Decimal Detectives

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Convert 1/8 to a decimal.	**0.125**
2	Convert -3/20 to a decimal.	**-0.15**
3	Convert 5/12 to a decimal. Use parentheses for repeating digits.	**0.41(6)**
4	Convert -1/6 to a decimal. Use parentheses for repeating digits.	**-0.1(6)**
5	Convert 13/40 to a decimal.	**0.325**
6	Convert 2/11 to a decimal. Use parentheses for repeating digits.	**0.(18)**

PART 2 · APPLY IT

1. **0.34375, terminates** Divide 11 by 32 using long division. The remainder becomes 0 after five decimal places.
2. **0.2(7), the digit 7 repeats** Divide 5 by 18. After the first decimal digit, the same remainder occurs again, so 7 repeats.

CHALLENGE

0.3(6). The nonrepeating digit is 3, and the repeating digit is 6. It does not terminate because the remainder 20 repeats after each 6.

Accept equivalent repeating-decimal notation, such as 0.4166... for 0.41(6). Require a negative sign for negative fractions and accept trailing zeros on terminating decimals.