LESSON MAKER PRO

Three Ways to Write It

Move among fractions, decimals, and percents.

GRADE 7 · MT.7.NS.3

MT.7.NS.3 "Write any rational number as a fraction, decimal, and percent using long division, and know that the decimal form of a rational number terminates or repeats."

NAME _____ DATE _____

DIVIDE, THEN CONVERT

To write a fraction as a decimal, use long division: divide the numerator by the denominator. If the remainder reaches 0, the decimal terminates. If a remainder repeats, the decimal repeats; multiply the decimal by 100 to write it as a percent.

WORKED EXAMPLE

Write 7/16 as a decimal and a percent.

1. 16 does not go into 7. Write 0 and a decimal point, then bring down 0 to make 70.
2. 70 ÷ 16 = 4 R6. Bring down 0 to make 60.
3. 60 ÷ 16 = 3 R12. Bring down 0: 120 ÷ 16 = 7 R8.
4. Bring down 0: 80 ÷ 16 = 5 R0. Multiply 0.4375 by 100 to get 43.75%.

Answer: 7/16 = 0.4375 = 43.75%

PRACTICE 6 problems

1 Use long division to write 5/4 as a decimal. Then write it as a percent.

ANSWER _____

2 Use long division to write 2/9 as a decimal. Then write it as a percent.

ANSWER _____

3 Write 0.6 as a fraction in simplest form and as a percent.

ANSWER _____

4 Write 12.5% as a decimal and as a fraction in simplest form.

ANSWER _____

5 Use long division to write -3/8 as a decimal. Then write it as a percent.

ANSWER _____

6 Use long division to write 4/11 as a decimal. Then write it as a percent.

ANSWER _____

APPLY IT Show your work

1 You win 9 out of 20 games in a tournament. Write the fraction of games you won as a decimal and a percent. Does the decimal terminate or repeat?

WORK SPACE

ANSWER _____

2 A group completes 4 out of 9 levels in a game. Write the fraction of levels completed as a decimal and a percent. Does the decimal terminate or repeat?

WORK SPACE

ANSWER _____

CHALLENGE One step up

Use long division to write 5/12 as a decimal and a percent. Which remainder repeats, and why does that make the decimal repeat?

WORK SPACE AND ANSWER

ANSWER KEY

Three Ways to Write It

GRADE 7 · MT.7.NS.3

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Use long division to write 5/4 as a decimal. Then write it as a percent.	**1.25; 125%**
2	Use long division to write 2/9 as a decimal. Then write it as a percent.	**0.222…; 22.222…%**
3	Write 0.6 as a fraction in simplest form and as a percent.	**3/5; 60%**
4	Write 12.5% as a decimal and as a fraction in simplest form.	**0.125; 1/8**
5	Use long division to write -3/8 as a decimal. Then write it as a percent.	**-0.375; -37.5%**
6	Use long division to write 4/11 as a decimal. Then write it as a percent.	**0.363636…; 36.363636…%**

PART 2 · APPLY IT

1. **9/20 = 0.45 = 45%; terminates** Divide 9 by 20 to get 0.45. The remainder reaches 0, so the decimal terminates.
2. **4/9 = 0.444… = 44.444…%; repeats** Dividing 4 by 9 keeps producing a remainder of 4, so the digit 4 repeats. Multiply the decimal by 100 for the percent.

CHALLENGE

5/12 = 0.41666… = 41.666…%. The remainder 8 repeats, so each next division step produces another 6.

Accept a bar over repeating digits in place of an ellipsis. For the challenge, a student may say the same remainder leads to the same next digit.