

Grade 9

WEEK 4

Lesson # 2

Topic: Computation

Sub-Topic: Dividing decimals

Objectives:

Students will:

- ✓ Understand how to set down decimals for division;
- ✓ Divide decimal with ease;

Content:

Dividing with Decimals

Dividing decimals is similar to dividing whole numbers, except you have to handle the decimal point before you start dividing.

1. Move the decimal point in the divisor and dividend.

Turn the *divisor* (the number you're dividing by) into a whole number by moving the decimal point all the way to the right. At the same time, move the decimal point in the *dividend* (the number you're dividing) the same number of places to the right.

2. Place a decimal point in the *quotient* (the answer) directly above where the decimal point now appears in the dividend.
3. Divide as usual, being careful to line up the quotient properly so that the decimal point falls into place. Line up each digit in the quotient just over the last digit in the dividend used in that cycle.

Example:

1. Divide the following: $9.152 / 0.8 = ?$

11.44. To start out, write the problem as usual:

$$\begin{array}{r} 0.8 \overline{)9.152} \end{array}$$

Turn 0.8 into the whole number 8 by moving the decimal point one place to the right. At the same time, move the decimal point in 9.1526 one place to the right. Put your decimal point in the quotient directly above where it falls in 91.25:

$$8.\overline{)91.52}$$

Now you're ready to divide. Just be careful to line up the quotient properly so that the decimal point falls into place.

$$\begin{array}{r} \mathbf{11.44} \\ 8.\overline{)91.52} \\ \underline{-8} \\ 11 \\ \underline{-8} \\ 35 \\ \underline{-32} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

2. Divide the following: $21.9 / 0.015 = ?$

1,460. Set up the problem as usual:

$$\mathbf{0.015)\overline{21.900}}$$

Notice that two trailing zeros are attached to the dividend because you need to move the decimal points in each number three places to the right. Again, place the decimal point in the quotient directly above where it now appears in the dividend, 21900:

$$\mathbf{15.\overline{)21900.}}$$

Now you're ready to divide. Line up the quotient carefully so the decimal point falls into place:

$$\begin{array}{r} \mathbf{1460.} \\ 15.\overline{)21900.} \\ \underline{-15} \\ 69 \\ \underline{-60} \\ 90 \\ \underline{-90} \\ 0 \end{array}$$

Even though the division comes out even after you write the digit 6 in the quotient, you still need to add a place holding zero so that the decimal point appears in the correct place.

Reference:

<https://www.dummies.com/education/math/pre-algebra/how-to-divide-decimals/>

Exercise:

Divide the following decimal by ten:

- | | |
|--------------------|-------------------|
| 1. A) $6.25 / 20$ | B) $170.4 / 30$ |
| 2. A) $692.8 / 40$ | B) $280.5 / 50$ |
| 3. A) $214.8 / 60$ | B) $429.45 / 70$ |
| 4. $431.4 / 200$ | B) $964.8 / 300$ |
| 5. $633.2 / 400$ | B) $1029.5 / 500$ |

Divide the following decimal by decimal:

- | | |
|------------------------|--------------------|
| 1. A) $8.321 / 3.14$ | B) $39.176 / 4.72$ |
| 2. A) $401.982 / 56.3$ | B) $320.37 / 35.4$ |
| 3. A) $72.96 / 0.95$ | B) $76.383 / 0.81$ |
| 4. A) $23.205 / 27.3$ | B) $23.384 / 31.6$ |
| 5. A) $78.306 / 84.2$ | B) $67.71 / 91.5$ |

Solution:

- | | | | |
|--------------|----------|------------|---------|
| 1. A) 0.3125 | B) 5.68 | 1. A) 2.65 | B) 8.3 |
| 2. A) 17.32 | B) 5.61 | 2. A) 7.14 | B) 9.05 |
| 3. A) 3.58 | B) 6.135 | 3. A) 76.8 | B) 94.3 |
| 4. A) 2.157 | B) 3.216 | 4. A) 0.85 | B) 0.74 |
| 5. A) 1.583 | B) 2.059 | 5. A) 0.93 | B) 0.74 |