Pre-Algebra Workbook Solutions

Decimals

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PLACE VALUE

■ 1. Identify the place value of the 4 in 12.8746.

Solution:

The 4 in 12.8746 is in the thousandths place.

■ 2. Identify the place value of the 2 in $4{,}562.387$.

Solution:

The 2 in $4{,}562.387$ is in the ones place.

■ 3. Identify the place value of the 0 in 307.119.

Solution:

The 0 in 307.119 is in the tens place.

■ 4. What is the number in the hundredths place of 80.471?

Solution:

In 80.471, the 7 is in the hundredths place.

■ 5. What is the number in the ten-thousandths place of $6{,}520.0019$?

Solution:

In $6{,}520.0019$, the 9 is in the ten-thousandths place.

■ 6. What is the number in the tenths place of 0.89104?

Solution:

In 0.89104, the 8 is in the tenths place.

■ 7. Does “smaller” or “larger” complete the statement?

The further you move to the right of the decimal point, the _____ the value gets.

Solution:

smaller

■ 8. Does “smaller” or “larger” complete the statement?

The further you move to the left of the decimal point, the _____ the value gets.

Solution:

larger

DECIMAL ARITHMETIC

■ 1. Find the sum.

$$4.5 + 3.75$$

Solution:

8.25

■ 2. Find the difference.

$$7.87 - 4.9876$$

Solution:

2.8824

■ 3. Find the product.

$$1.5 \cdot 8.8$$

Solution:

13.2

■ 4. Find the quotient.

$$5.65 \div 0.02$$

Solution:

282.5

REPEATING DECIMALS

■ 1. A finite decimal number is a number that _____.

Solution:

ends

■ 2. Rewrite 0.888888 as a repeating decimal.

Solution:

$0.\overline{8}$

■ 3. Rewrite 0.1818181818 as a repeating decimal.

Solution:

$0.\overline{18}$

■ 4. Rewrite 1.333333333 as a repeating decimal.

Solution:

$1.\overline{3}$

■ 5. What is the next digit in $3.\overline{142857}$?

Solution:

1

■ 6. What is the next digit in $0.41\overline{6}$?

Solution:

6

■ 7. What is the next digit in $0.\overline{81}$?

Solution:

8

■ 8. Name an example of a decimal number that does not end, but does not repeat.

Solution:

π is an example of a non-repeating, non-finite decimal number.

ROUNDING

■ 1. Complete the statement.

If a number is less than _____, you round down.

Solution:

5

■ 2. Complete the statement.

If a number is _____ or greater, you round up.

Solution:

5

■ 3. Round 0.7865 to the nearest hundredth.

Solution:

The 8 is the digit in the hundredths place, so we'll use the 6 that follows the 8 to round up to 0.79.

■ 4. Round 11.451 to the nearest tenth.

Solution:

The 4 is the digit in the tenths place, so we'll use the 5 that follows the 4 to round up to 11.5.

■ 5. Round 691.014 to the tens place.

Solution:

The 9 is the digit in the tens place, so we'll use the 1 that follows the 9 to round down to 690.

■ 6. Round $11.\overline{6}$ to the nearest thousandth.

Solution:

If we extend the decimal to one digit past the thousandths place, we can write it as 11.6666. The third 6 is in the thousandths place, so we'll use the fourth 6 that follows it to round up to 11.667.

■ 7. Round $44.\overline{18}$ to the nearest tenth.

Solution:

The 1 is the digit in the tenths place, so we'll use the 8 that follows the 1 to round up to 44.2.

■ 8. Round $15.\overline{8}$ to five decimal places.

Solution:

If we extend the decimal to one digit past five decimal places, we can write it as 15.888888. We'll use the 8 in the sixth decimal place to round up to 15.88889.

■ 9. Complete the statement.

When you round a number to the tenths place, look at the digit in the _____ place in order to determine which way to round the number.

Solution:

hundredths

■ 10. Complete the statement.

When you round a number to the thousandths place, look at the digit in the _____ place in order to determine which way to round the number.

Solution:

ten thousandths

■ 11. Judith types $2 \div 3$ into the calculator and gets the answer 0.666666666667. Judith tells her friend Andy that this is not a repeating decimal because there is a 7 at the end. Andy disagrees and says the calculator rounds the number and that is why there is a 7. Who is correct? Why?

Solution:

Andy is correct because calculators cannot show repeating decimals going on and on. So, it must round the number based on the number of digits that can fit on the screen. When the calculator rounds, 6 is higher than 5, so the number gets rounded up from a 6 to a 7.

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