Operations on Decimals

Objectives: …to add, subtract, multiply, and divide decimals

Assessment Anchor:

7.A.3.2 – Compute accurately with and without use of a calculator

Vocabulary alert!!

SUM – the answer to an addition problem

DIFFERENCE – the answer to a subtraction problem

NOTES

**** When adding OR subtracting decimal numbers, you must…**

LINE UP THE DECIMAL POINT!

1. **Write numbers vertically and line up the decimal points.**
2. **Fill in empty place values with ZEROS.**
3. **Add or subtract, as if they were whole numbers.**
4. **Decimal point comes straight down into your answer.**

EXAMPLES

1) 35.43 + 121.9

35.43	35.43	35.43
+ 121.9	+ 121.90	+ 121.90
		157.33
↑	↑	↑
Line up decimal pt.	Fill in zeros.	Decimal straight down.

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2) 74.28 – 9.516

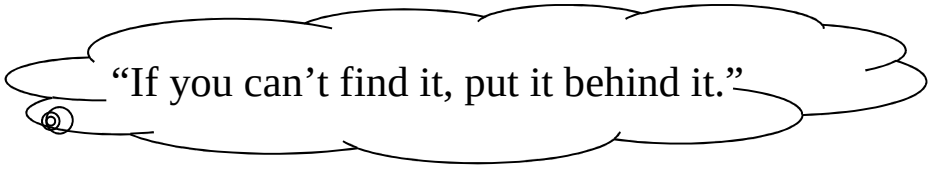
74.28	74.280	74.280
– 9.516	– 9.516	– 9.516
		64.764
↑	↑	↑
Line up decimal pt. Bigger number on top.	Fill in zeros.	Decimal straight down. Borrow when necessary.

3) 35.88 + 192.7

4) 13.4 – 2.28

5) 48.44 + 51

6) 50 – 25.42



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Vocabulary alert!!

PRODUCT – the answer to a multiplication problem

MORE NOTES

**** When multiplying decimal numbers, you must…**

COUNT THE DECIMAL PLACES!

1. **Write numbers vertically with final digits on top of each other.**
2. **Multiply as if they were whole numbers.**
3. **Count the number of digits to the right of the decimal points (total) and make sure the answer has the same!**

EXAMPLES

7) 35.3×4.1

35.3
× 4.1
353
14120
144.73

Numbers properly aligned.

Insert zero as a place value holder.

There were 2 digits behind the decimal in the original numbers, so there should be 2 digits behind the decimal in the answer.

8) 2.19×3.5

2.19
× 3.5
1095
6570
7.665

Numbers properly aligned.

Insert zero as a place value holder.

There were 3 digits behind the decimal in the original numbers, so there should be 3 digits behind the decimal in the answer.

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9) 38.1×0.32

10) 25×4.12

11) 83.4×0.006

Vocabulary alert!!

QUOTIENT – the answer to a division problem

MORE NOTES

**** When dividing decimal numbers, you must…**

MAKE THE DIVISOR A WHOLE #!

1. **Write problem using long division symbol. THE FIRST NUMBER GOES INSIDE THE DIVISION SYMBOL!**
2. **Examine the divisor for a decimal point…if necessary, move the decimal point to the right until it is behind all digits in the divisor.**
3. **Move the decimal point the same number of spaces in the dividend.**
4. **Now put the decimal point straight up into your answer.**
5. **Divide as if whole numbers.**

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EXAMPLES

12) $46.32 \div 0.4$

$0.4 \overline{)\,46.32}$ ← First number goes inside symbol. Move decimal to the right 1 time.

$$\begin{array}{r} 115.8 \\ 04.\overline{)\,463.2} \\ -\,4 \\ \hline 06 \\ -\,4 \\ \hline 23 \\ -\,20 \\ \hline 32 \\ -\,32 \\ \hline 0 \end{array}$$

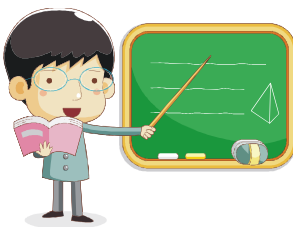
← Decimal point goes straight up.

13) $902 \div 0.11$

$0.11 \overline{)\,902}$ ← First number goes inside symbol. Move decimal to the right 2 times.

$$\begin{array}{r} 8200. \\ 011.\overline{)\,90200.} \\ -\,88 \\ \hline 22 \\ -\,22 \\ \hline 000 \end{array}$$

← Decimal point goes straight up.



"Keep dividing until you have a remainder of zero, OR a repetition appears."

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14) 2.856 ÷ 0.04

15) 0.496 ÷ 1.2

16) 45 ÷ 0.004