



Decimals

ADDITION OF DECIMALS

1) Line up the decimal points of the numbers to be added.

2) Add the numbers. Keep the decimal points in the answer in the same place.

$$\begin{array}{r} \text{Example:} \quad 265.85 \\ \quad \quad \quad 91.956 \\ + \quad 4001.6 \\ \hline \quad \quad 4359.406 \end{array}$$

SUBTRACTION OF DECIMALS

1) Line up the decimal points of the numbers to be subtracted.

2) Add zeroes at the end of the first number if it doesn't have enough decimal places.

3) Subtract the numbers. Keep the decimal in the answer at the same location.

$$\begin{array}{r} \text{Example:} \quad 3673.9000 \\ \quad \quad \quad - 853.6834 \\ \hline \quad \quad 2420.2166 \end{array}$$

MULTIPLICATION OF DECIMALS

1) Line up the numbers so their last digits are in the same column.

2) Multiply as with whole numbers.

3) The number of decimal places in the answer is the same as the number of decimal places in the question.

$$\begin{array}{r} \text{Example: } 2.33 \quad 2 \text{ decimal places} \\ \quad \times 1.3 \quad 1 \text{ decimal place} \\ \hline \quad \quad 699 \\ \quad \quad \underline{233} \\ \quad 3029 \end{array}$$

Answer has 3 decimal places: 3.029

DIVISION OF DECIMALS

1) Make the divisor (the number you divide by) into a whole number by moving the decimal point.

2) Move the decimal point in the dividend (the number you divide into) the same number of places in the same direction.

3) Divide as normal. The decimal point in the answer is above the decimal point in the new dividend.

4) If the division does not come out even, add a zero at the end of the dividend and keep going until you have enough decimal places.

$$\text{Example: } 51.59 \div 13.4 = ?$$

Move the decimal place in the divisor one place to the right to make 134.

Move the decimal place in the dividend one place to the right to make 515.9.

$$\begin{array}{r} \text{DIVISOR} \rightarrow 134 \overline{) 515.90} \leftarrow \text{QUOTIENT} \\ \quad \quad \quad 402 \\ \quad \quad \quad \underline{1139} \\ \quad \quad \quad 1072 \\ \quad \quad \quad \underline{670} \\ \quad \quad \quad 670 \\ \quad \quad \quad \underline{0} \end{array}$$

5) If the answer needs to be rounded to a certain number of decimal places, divide until you have one place too many, and round to that number.



EXERCISES

A. Add:

1) $0.2 + 1.8 =$ _____ 4) $0.004 + 4.04 =$ _____

2) $2.44 + 0.33 + 12 =$ _____ 5) $23 + 10.09 =$ _____

3) $123 + 0.09 =$ _____ 6) $0.999 + 0.11 =$ _____

B. Subtract:

1) $13.4 - 2.6 =$ _____ 4) $0.2 - 0.00345 =$ _____

2) $0.344 - 0.226 =$ _____ 5) $1 - 0.55 =$ _____

3) $1.555 - 0.666 =$ _____ 6) $1.01 - 0.799 =$ _____

C. Multiply:

1) $3.8 \times 2.8 =$ _____ 4) $0.2 \times 0.002 =$ _____

2) $143 \times 0.4 =$ _____ 5) $1.003 \times 10.1 =$ _____

3) $1.44 \times 1.02 =$ _____ 6) $0.005 \times 5.55 =$ _____

D. Divide exactly:

1) $12.98 \div 5.5 =$ _____ 3) $0.28 \div 0.014 =$ _____

2) $5.4188 \div 0.23 =$ _____ 4) $36 \div 14.4 =$ _____

E. Divide and round to two decimal places:

1) $76.2 \div 9.1 =$ _____ 3) $33.45 \div 0.066 =$ _____

2) $256.3 \div 0.48 =$ _____ 4) $4 \div 0.35 =$ _____

SOLUTIONS

A. (1) 2 (2) 14.77 (3) 123.09 (4) 4.044 (5) 33.09 (6) 1.109

B. (1) 10.8 (2) 0.118 (3) 0.889 (4) 0.196 55 (5) 0.45 (6) 0.211

C. (1) 10.64 (2) 57.2 (3) 1.4688 (4) 0.000 4 (5) 10.130 3 (6) 0.027 75

D. (1) 2.36 (2) 23.56 (3) 20 (4) 2.5

E. (1) 8.37 (2) 533.96 (3) 506.82 (4) 11.43

