Add Decimals

Find 50.9 + 0.26.

Line up the decimal points

$$50.90$$
$$+\;0.26$$

Annex a zero so each place has a digit

Add each place

$$50.90$$
$$+\;0.26$$
$$\overline{51.16}$$

Practice

1. 746.52 + 2.3= _____

2. 45.1 + 723.2= _____

3. 25.6 + 4= _____

4. 0.25 + 1= _____

Subtract Decimals

Find 20.7 − 0.258.

Line up the decimal points   Subtract each place. Regroup as needed.

$$20.700$$ ---------- Annex zeros as placeholders.
$$-\;\;0.258$$

$$20.700$$
$$-\;0.258$$
$$\overline{20.442}$$

Practice

1. 35.78 − 4.67 = _____

2. 23.058 − 0.26 = _____

3. 85.5 − 0.256 = _____

4. 10.25 − 6.003 = _____

Multiply Decimals

2.18 $\longrightarrow$ **2 decimal places**   **Count right to left**
X2.5 $\longrightarrow$ **1 decimal places**
_____
1090
436
_____
5.450 $\longrightarrow$ **3 decimal places**

    2   **1**
0.43 x 0.2 = 0086   **Where do you place the decimal point?**
                          0.086

How many places do you have after the decimal point?

Practice

1. 7.22 x 4.5 = _____

2. 2.08 x 6.2 = _____

3. 9.8 x 7.5 = _____

Divide Decimals Numbers by a whole number

196.8 ÷ 32   **Remember first in line is the first in the house**

          6.15 $\longrightarrow$ Put the decimal point in the quotient right above
32 | 196.80
    192
      4 8   **Divide, multiply, subtract**
      32   **Bring down**
     16 0   **Divide, subtract**
     16 0   **Annex a 0 to the end**
      0 0 0

Practice

1. 252.3 ÷ 34 = _____

2. 183.2 ÷ 22 = _____

Divide Decimals

2.43 ÷ 0.5

0.5) 2.43

Move the decimal in the **divisor** to the **right** (count how many)

Move the decimal in the **dividend the same number of places** as the divisor

Rewrite the long division problem with the decimals in their **new** homes!

```
        4.86
    5 ) 24.30
        20
         4 3
         4 0
           30
           30
           00
```

5   **Divide as usual**

Put the decimal in the quotient directly above its knew location

Practice

1. 28.5 ÷ 2.3 _____

2. 48.2 ÷ 1.2 _____

3. 36.8 ÷ 0.3 _____

Divide Decimals with remainders

196 ÷ 32

```
        6    R= 4
   32 ) 196
        192
          4
```

Remember first in line is the first in the house

Divide, multiply, subtract

Stop when you don't have anymore numbers to bring down

Practice

1. 137 ÷ 5 _____

2. 139 ÷ 6 _____

3. 479 ÷ 7 _____

Multiply Fractions

Multiply direct

$$3 \times \frac{1}{2} = \frac{3 \times 1}{1 \times 2} = \frac{3}{2}$$

The whole number as a fraction is written as

Multiply direct

$$\frac{1}{4} \times \frac{2}{3} = \frac{2}{12}$$

Convert mixed numbers to fractions

$$2\frac{1}{3} \times 5\frac{2}{5} = 2^{+1}_{\times 3} \times 5^{+2}_{\times 5} = \frac{7 \times 27}{3 \quad 5} = \frac{189}{15}$$

Multiply direct

$$\frac{189}{15} = 12\frac{9}{15}$$

Practice

1. $2 \times \frac{5}{8} =$ _____

2. $\frac{3}{7} \times \frac{8}{2} =$ _____

3. $3\frac{2}{3} \times 8\frac{5}{6} =$ _____

Divide Fractions

Fish way. Multiply across

$$\frac{5}{6} \div \frac{1}{3} = \frac{15}{6} = 2\frac{3}{6}$$

Reciprocal way. Switch the numbers.

$$\frac{5}{6} \div \frac{1}{3} = \frac{5}{6} \times \frac{3}{1} = \frac{15}{6} = 2\frac{3}{6}$$

Change the whole number to a fraction

$$14 \div \frac{4}{7} =$$

$$\frac{14}{1} \div \frac{4}{7} = \frac{98}{4}$$

Make the operation using the fish or reciprocal way.

Convert mixed numbers to fractions

$$5\frac{1}{3} \div 1\frac{1}{3} =$$

Make the operation using the fish or reciprocal way.

$$5^{+1}_{\times 3} \div 1^{+1}_{\times 3} = \frac{16}{3} \div \frac{4}{3} = \frac{48}{12} = 4$$

Practice

1. $\frac{7}{3} \div \frac{2}{9} =$ _____

2. $16 \div \frac{8}{5} =$ _____

3. $6\frac{5}{4} \div 5\frac{2}{3} =$ _____