

Division (Writing the Remainders as Decimals)

When a number does not divide evenly into another, the leftover can be expressed as a remainder, as a fraction, or as a decimal.

Example: $125 \div 10 =$

Remainder

$$\begin{array}{r} 62^{R1} \\ 2 \overline{)125} \\ -12 \\ \hline 5 \\ -4 \\ \hline 1 \end{array}$$

Fraction

$$\begin{array}{r} 62\frac{1}{2} \\ 2 \overline{)125} \\ -12 \\ \hline 5 \\ -4 \\ \hline 1 \end{array}$$

Decimal

$$\begin{array}{r} 62.5 \\ 2 \overline{)125.0} \\ -12 \\ \hline 5 \\ -4 \\ \hline 10 \\ -10 \\ \hline 0 \end{array}$$



The key to working out a long division problem, where the remainder is written as a decimal, is the ability to add zeros after the decimal point. **Remember that a whole number always has a decimal to the right of the number, even if it has not been written in.**

| hundred millions | ten millions | millions | hundred thousands | ten thousands | thousands | hundreds | tens | units | • decimal | tenths | hundredths | thousandths | ten thousandths |
|------------------|--------------|----------|-------------------|---------------|-----------|----------|------|-------|-----------|--------|------------|-------------|-----------------|
| | | | | | | 1 | 2 | 5 | | | | | |
| | | | | | | 1 | 2 | 5 | . | | | | |
| | | | | | | 1 | 2 | 5 | . | 0 | | | |
| | | | | | | 1 | 2 | 5 | . | 0 | 0 | | |

125 is the same as **125.00**

We can add as many zeros as we wish after the decimal point without altering the number's value. This is because there are zero tenths, zero hundredths, etc.

Divide.

- Add a decimal point to the end of the whole number.
- Attach zeros in the dividend as needed.
- Show your work on another sheet of paper.

Ex. $28 \div 5$
Remember $28 = 28.0$

$$\begin{array}{r} 5.6 \\ 5 \overline{)28.0} \\ \underline{-25} \\ 30 \\ \underline{-30} \\ 0 \end{array}$$

1) $5 \overline{)28}$

2) $4 \overline{)22}$

3) $2 \overline{)19}$

4) $4 \overline{)94}$

5) $5 \overline{)76}$

6) $8 \overline{)100}$

7) $4 \overline{)17}$

8) $2 \overline{)807}$

9) $8 \overline{)18}$

10) $6 \overline{)135}$

11) $5 \overline{)163}$

12) $32 \overline{)432}$

13) $45 \overline{)324}$

14) $28 \overline{)574}$

15) $36 \overline{)441}$

Mixed Review:

- Remember to line-up your decimal points before adding or subtracting.

16) $(55.26 + 32.8) - 1.3 + (5.74 - 27) =$

17) $9.33 + 3 + (2.99 - 5.1) =$

18) $(76.1 + 2.48) - 1.18 + (25 - 54.3) =$

19) $68 - 25.2 + 23.8 =$

20) $9.53 + 49.24 - 4.4 =$

