

Factors and Multiples

* **Factor:** Numbers you multiply to get a product.

12: 1, 2, 3, 4, 6, 12

or

$$\begin{array}{r} 12 \\ \hline 1 \overline{)12} \\ 2 \overline{)6} \\ 3 \overline{)4} \end{array}$$

* **Greatest Common Factor:**

GCF

18: 1, 2, 3, 6, 9, 18

24: 1, 2, 3, 4, 6, 8, 12, 24

* Biggest Number in Common! *

* **Multiples:**

3: 3, 6, 9, 12, 15, 18, 21, ...

* **Least Common Multiple:**

LCM

5: 5, 10, 15, 20, 25, 30, 35

25: 25, 50, 75, 100

* Smallest number they have in common! *

* **Greatest Common Factor - Option 2:**

GCF of 18 + 24 = _____

TRICK!

Step 1: divide by 2 until you no longer can

Step 2: divide by any other number possible

Step 3: Multiply

$$\begin{array}{r} 2 \overline{)18} \\ 3 \overline{)9} \\ \times 3 \end{array}$$

$\times 3$ prime

Multiply 2 · 3

GCF = 6

$$\begin{array}{r} 2 \overline{)24} \\ 2 \overline{)12} \\ 2 \overline{)6} \end{array}$$

$\times 3$ prime

Multiply 2 · 2 · 2

GCF = 6

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Long Multiplication

- * Multiplicand: A number to be multiplied by another.
- * Multiplier: A number by which another is multiplied.
- * Product: The result (answer) of a multiplication problem.

$$\begin{array}{r} \text{Factor} \rightarrow 704 \leftarrow \text{multiplicand} \\ \text{Factor} \rightarrow \times 62 \leftarrow \text{multiplier} \\ \hline 1408 \leftarrow \text{ones} \\ + 42240 \leftarrow \text{Tens} \\ \hline 43,648 \leftarrow \text{Product} \end{array}$$

* Every number you cross out becomes a Zero! *

$$\begin{array}{r} \cancel{3} \cancel{6} \cancel{9} \cancel{2} \\ \times \quad \cancel{1} \cancel{2} \cancel{3} \\ \hline 11076 \\ 73840 \\ + 369200 \\ \hline 454,116 \end{array}$$

$$\begin{array}{r} 4201 \\ \times \quad 10^{\uparrow} \\ \hline 42,010 \\ 4201 \\ \times \quad 100^{\uparrow} \\ \hline 420,100 \end{array}$$

* Just move the Zero up with 10, 100's, 1,000, 10,000... *

Long Division Review

* You can write a division problem in many different ways:

① $741 \div 8$ ② $8 \overline{)741}$ ③ $\frac{741}{8}$ ④ $741/8$

* divisor / quotient / dividend

* Quotient: The answer to a division problem.

* dividend: The number you divide into in a division problem.

* divisor: The number you divide by in a division problem.

$$\begin{array}{r} 741 \\ 8 \overline{)741} \\ \underline{-72} \\ 21 \\ \underline{-16} \\ 50 \\ \underline{-48} \\ 20 \\ \underline{-16} \\ 40 \end{array}$$

$$741/8 = 92.625$$

* Round to nearest Hundredths

$$92.625 = 92.63$$

* Round to nearest Tenths

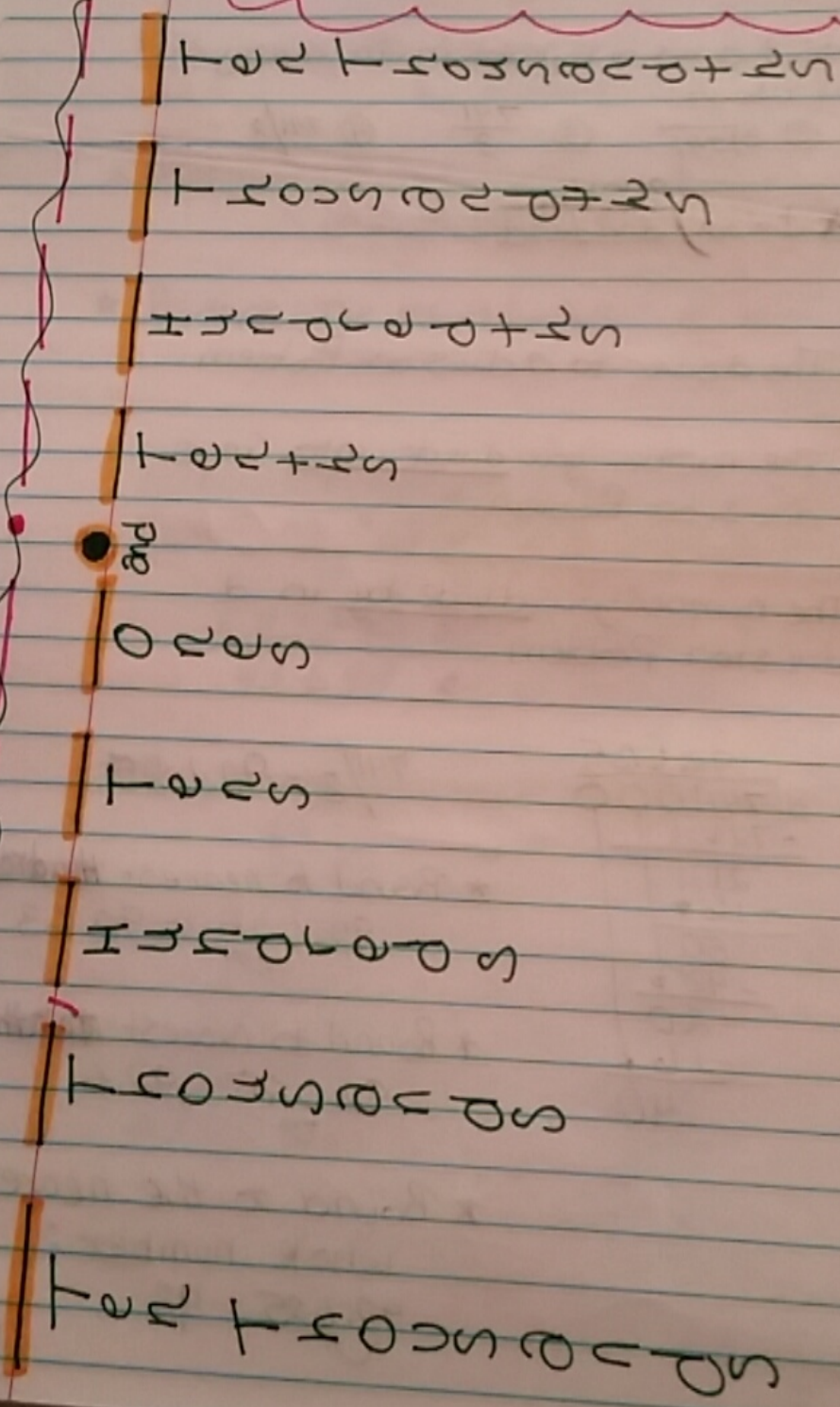
$$92.625 = 92.6$$

* Round to the nearest whole number:

$$92.625 = 93$$

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Place Value Chart



100

Adding & Subtracting Fractions

- ★ When adding & Subtracting Fractions you MUST have Common Denominators! ★
- ★ Then add or Subtract Straight Across! ★

★ To Find Common Denominators you need to Find the LCM, or just Multiply your denominators and Simplify later! ★

$$\frac{3}{4} + \frac{1}{12} =$$

$$\frac{3 \times 3}{3 \times 4} + \frac{1}{12} = \frac{9}{12} + \frac{1}{12} = \frac{10 \div 2}{12 \div 2} = \boxed{\frac{5}{6}}$$

4: 4, 8, 12, 16
12: 12, 24, 36

Simplify
Reduce

$$\frac{10}{12} = \frac{5}{6}$$

$$7 - \frac{1}{3} =$$

$$7 - \frac{1}{3} = \frac{3 \times 7}{3 \times 1} - \frac{1}{3} = \frac{21}{3} - \frac{1}{3} = \frac{20}{3} = \boxed{6 \frac{2}{3}}$$

Whole numbers
always over 1!!

Improper:
Must Divide!
Simplify if
possible!

$$3 \overline{) 20} \begin{array}{r} 6 \\ \underline{18} \\ 2 \end{array}$$

↑ numerator

$$3 \frac{3}{4} - 1 \frac{7}{8} =$$

$$3 \frac{3}{4} - 1 \frac{7}{8} = \frac{2 \times 15}{2 \times 4} - \frac{15}{8} = \frac{30}{8} - \frac{15}{8} = \frac{15}{8} = \boxed{1 \frac{7}{8}}$$

★ Convert to improper
Fractions, then
Subtract.

4: 4, 8, 12, 16
8: 8, 16, 24

Improper!
Divide!

$$8 \overline{) 15} \begin{array}{r} 1 \\ \underline{8} \\ 7 \end{array}$$

↑ numerator

$$+ 3 \frac{3}{4} = \frac{15}{4}$$

$$1 \frac{7}{8} = \frac{15}{8}$$

$$3 \cdot 4 + 3 = 15$$

$$1 \cdot 8 + 7 = 15$$

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