Review Topic 6: Decimal Multiplication and Division

Decimal Multiplication

1. Ignore the decimal
2. Multiply
3. Move the decimal the appropriate number of place values to the left.

2.03 x 0.015

$$\begin{array}{r} 2.03 \\ \times\ 0.015 \\ \hline 1015 \\ +\ 203 \\ \hline 3045 \end{array}$$

There are **two** places to the right of the decimal in the first number and **three** to the right of the decimal in the second number. The decimal will be placed **five** places to the left of the end of the answer.

0.03045

Practice: Perform the indicated operation.

a) $-4.1 \times 6 =$ $0.04 \times (-0.6)$ $-0.6 \times (-4)$

b) $-2.43 \times 100 =$ $243 \times (-100)$ $-1.5 \times (-1.5)$

Division in General

There are three common ways to write division. $3 \div 4$, $4\overline{)3}$, and $\frac{3}{4}$

First$\div$*Last, Outside*$\overline{)\textit{Inside}}$, and $\frac{\textit{Top}}{\textit{Bottom}}$ Use **F.I.T** to remember the **F**irst, **I**nside and **T**op numbers must match when you change to different division notation.

The amount being split apart, sorted, or grouped goes **inside** the division "house."

Decimal Division

1. Move the decimal next to the "house."
2. Match the move with the decimal inside the "house."
3. Divide
4. The decimal "floats to the top" in the answer.

$0.05\overline{)6.2}$ becomes $0.05.\overset{\wedge}{)}6.20.\overset{\wedge}{}$

The final problem solution is $0.05.\overset{\wedge}{)}\overset{124.}{6.20.}\overset{\wedge}{}$

Examples: Notice a decimal in a whole number is after the number.

$4.32 \div 3 \longrightarrow 3\overline{)4.32}^{1.44}$ $3 \div 4 \longrightarrow 4\overline{)3.00}^{0.75}$ $8 \div 0.05 \longrightarrow 0.05.\overset{\wedge}{)}\overset{160.}{8.00.}\overset{\wedge}{}$

The decimal doesn't move. Insert decimals and zeros. Move both decimals.

Practice: Perform the indicated operation.

a) $-5 \div 8 =$ $0.04 \div (-0.2)$ $-0.18 \div (-6)$

b) $-8 \div 5 =$ $2.6 \div (-5)$ $-15 \div (-0.03)$

Watch the operations carefully! You may round if the division goes on and on.

c) $-0.8 \div (-6)$ $0.4 \times (-1.6)$ $-4 + (-0.231)$

d) $0.14 \times (-0.6)$ $-3.18 \div (-6)$ $0.6 \div (-1.2)$

e) $0.04 \div (-0.02)$ $4 \times (-1.6)$ $-0.6 \div 8 =$

f) $-0.3 - 5.6$ $-8.1 + (-0.05)$ $-4 - 5.32$

g) $-0.5 \div 8 =$ $1.44 \div (-0.12)$ $0.8 + (-7)$

h) $-4.2 + (-0.55)$ $-0.25 \div 10 =$ $0.04 \times (-0.5)$

i) $4.1 \div (-0.02)$ $8.1 - 0.9$ $-3.2 - 0.25$

j) $-7.6 + 5.3$ $-0.56 \div (-8)$ $4 \div (-0.2)$