

## Part 3-3 → Decimal Multiplication

Rule 1: Do Not line up decimals

Rule 2: put # with fewer digits on bottom

Rule 3: Count up decimal places at end

Rule 4: Estimate to check!

Example:  $3.4 \times 7.28 =$

$$\begin{array}{r} 7.28 \\ \times 3.4 \\ \hline \end{array}$$

↑

we have first  
to do 4 times 8

But if you don't  
know your times  
tables don't worry!

Build your own  
with addition!

$$\begin{array}{r} 4 = 4 \times 1 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 8 = 4 \times 2 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 12 = 4 \times 3 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 16 = 4 \times 4 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 20 = 4 \times 5 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 24 = 4 \times 6 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 28 = 4 \times 7 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 32 = 4 \times 8 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 36 = 4 \times 9 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 40 = 4 \times 10 \\ + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2 = 3 \times 1 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 6 = 3 \times 2 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 9 = 3 \times 3 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 12 = 3 \times 4 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 15 = 3 \times 5 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 18 = 3 \times 6 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 21 = 3 \times 7 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 24 = 3 \times 8 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 27 = 3 \times 9 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 30 = 3 \times 10 \\ + 3 \\ \hline \end{array}$$

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Example:  $3.4 \times 7.28 =$

$$\begin{array}{r} 7.28 \\ \times 3.4 \\ \hline \end{array}$$

4 times 8 is 32  
write 2 carry 3

$$\begin{array}{r} 7.28 \\ \times 3.4 \\ \hline 12 \end{array}$$

4 times 2 is 8 + 3 is 11  
write 1 and carry 1

$$\begin{array}{r} 7.28 \\ \times 3.4 \\ \hline 2912 \end{array}$$

4 times 7 is 28  
plus 1 is 29

$$\begin{array}{r} \cancel{7.28} \\ \times \cancel{3.4} \\ \hline 2912 \\ \hline \end{array}$$

add place value

Cross out old carried numbers

$$\begin{array}{r} 7.28 \\ \times 3.4 \\ \hline 2912 \\ 84- \end{array}$$

3 times 8 is 24  
write 4 carry 2

$$\begin{array}{r} 7.28 \\ \times 3.4 \\ \hline 2912 \\ 84- \end{array}$$

3 times 2 is 6 + 2 is 8

$$\begin{array}{r}
 \overset{2}{\overset{+}{7.28}} \\
 \times \quad \overset{3}{3.4} \\
 \hline
 2912 \\
 2184\text{---}
 \end{array}$$

3 time 7 is 21

Now  
Add  
The  
products

$$\begin{array}{r}
 \overset{2}{\overset{+}{7.28}} \\
 \times \quad \overset{3}{3.4} \\
 \hline
 2912 \\
 2184\text{---} \\
 \hline
 24752
 \end{array}$$

Now  
Count  
The  
decimal  
places

$$\begin{array}{r}
 7.28 \\
 \times \quad 3.4 \\
 \hline
 24752
 \end{array}$$

2 here  
3 all together

so go back 3

Final Answer: 24.752

estimate to check 7.28 times 3.4 is a little more than 7 times 3 which is 21  
24.752 seems good 247.52 would not!