

Name: \_\_\_\_\_

## UNDERSTANDING PLACE VALUE: MULTIPLYING & DIVIDING BY 10 AND 100



Professor Place Value needs your help with these calculations!

### Multiplying by 10

First, lets address a common misconception:

Steve thinks that to multiply by 10, you just add a 0 to the number.  
For example, he says  $56 \times 10 = 560$ .

Sarah explains that this only works for **whole numbers**. She says,  
"When multiplying by 10, the digits move one place to the left."  
For example,  $7.8 \times 10$  becomes **78** not 7.80.



- $4 \times 10 = \underline{40}$
- $8 \times 10 = \underline{80}$
- $12 \times 10 = \underline{120}$
- $50 \times 10 = \underline{500}$
- $27 \times 10 = \underline{270}$
- $3.5 \times 10 = \underline{35}$
- $6.4 \times 10 = \underline{64}$
- $8.1 \times 10 = \underline{81}$
- $4.2 \times 10 = \underline{42}$
- $9.3 \times 10 = \underline{93}$

- $1.7 \times 10 = \underline{17}$
- $0.8 \times 10 = \underline{8}$
- $2.9 \times 10 = \underline{29}$
- $7.6 \times 10 = \underline{76}$
- $5.5 \times 10 = \underline{55}$
- $0.25 \times 10 = \underline{2.5}$
- $0.34 \times 10 = \underline{3.4}$
- $1.25 \times 10 = \underline{12.5}$
- $0.75 \times 10 = \underline{7.5}$
- $3.14 \times 10 = \underline{31.4}$

Name: \_\_\_\_\_

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### Multiplying by 100

Remember Sarah and Steve from multiplying by 10? This time,  
the rule is slightly different.

**When multiplying by 100, you move the digits two places to  
the left.**



- $4 \times 100 = \underline{400}$
- $8 \times 100 = \underline{800}$
- $12 \times 100 = \underline{1,200}$
- $50 \times 100 = \underline{5,000}$
- $27 \times 100 = \underline{2,700}$
- $3.5 \times 100 = \underline{350}$
- $6.4 \times 100 = \underline{640}$
- $8.1 \times 100 = \underline{810}$
- $4.2 \times 100 = \underline{420}$
- $9.3 \times 100 = \underline{930}$



- $1.7 \times 100 = \underline{170}$
- $0.8 \times 100 = \underline{80}$
- $2.9 \times 100 = \underline{290}$
- $7.6 \times 100 = \underline{760}$
- $5.5 \times 100 = \underline{550}$
- $0.25 \times 100 = \underline{25}$
- $0.34 \times 100 = \underline{34}$
- $1.25 \times 100 = \underline{125}$
- $0.75 \times 100 = \underline{75}$
- $3.14 \times 100 = \underline{314}$

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## UNDERSTANDING PLACE VALUE:

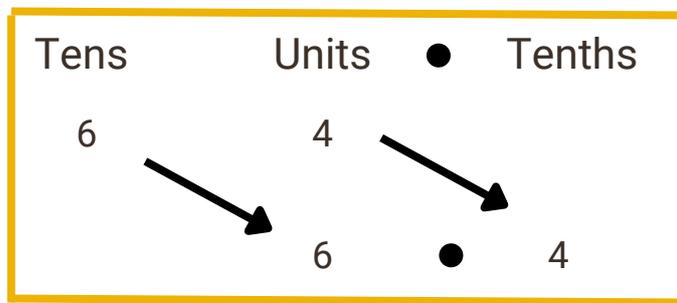
### MULTIPLYING & DIVIDING BY 10 AND 100



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#### Dividing by 10

When dividing a number by 10, all the digits move one place to the right. Eg  
 $64 \div 10 = 6.4$



- $650 \div 10 = \underline{65}$
- $420 \div 10 = \underline{42}$
- $900 \div 10 = \underline{90}$
- $310 \div 10 = \underline{31}$
- $150 \div 10 = \underline{15}$
- $75 \div 10 = \underline{7.5}$
- $64 \div 10 = \underline{6.4}$
- $32 \div 10 = \underline{3.2}$
- $18 \div 10 = \underline{1.8}$
- $56 \div 10 = \underline{5.6}$



- $41 \div 10 = \underline{4.1}$
- $29 \div 10 = \underline{2.9}$
- $93 \div 10 = \underline{9.3}$
- $54 \div 10 = \underline{5.4}$
- $27 \div 10 = \underline{2.7}$
- $43.2 \div 10 = \underline{4.32}$
- $84.6 \div 10 = \underline{8.46}$
- $924.8 \div 10 = \underline{92.48}$
- $742.1 \div 10 = \underline{74.21}$
- $5.9 \div 10 = \underline{0.59}$

Name: \_\_\_\_\_

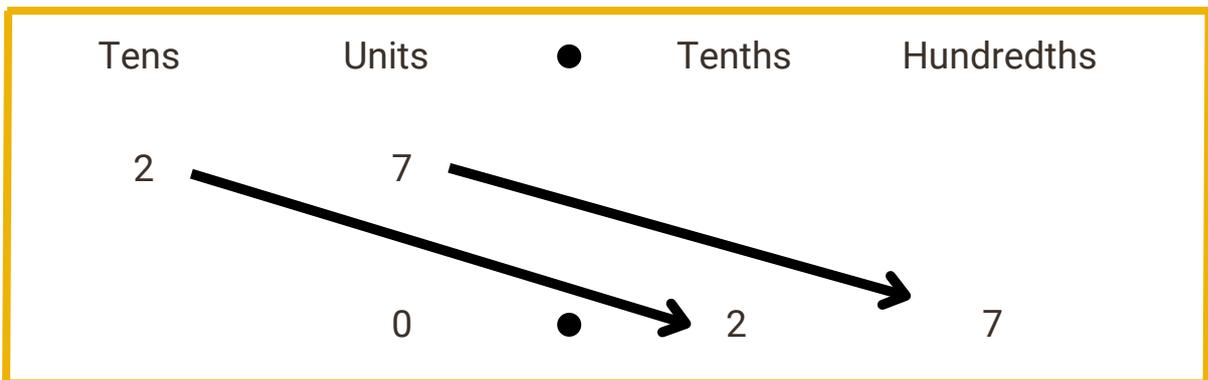
# UNDERSTANDING PLACE VALUE: MULTIPLYING & DIVIDING BY 10 AND 100



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## Dividing by 100

When dividing a number by 100, all the digits move two place to the right. Eg  
 $27 \div 100 = 0.27$



- $800 \div 100 = \underline{8}$
- $400 \div 100 = \underline{4}$
- $900 \div 100 = \underline{9}$
- $200 \div 100 = \underline{2}$
- $600 \div 100 = \underline{6}$
- $75 \div 100 = \underline{0.75}$
- $64 \div 100 = \underline{0.64}$
- $32 \div 100 = \underline{0.32}$
- $18 \div 100 = \underline{0.18}$
- $56 \div 100 = \underline{0.56}$



- $41 \div 100 = \underline{0.41}$
- $29 \div 100 = \underline{0.29}$
- $93 \div 100 = \underline{0.93}$
- $54 \div 100 = \underline{0.54}$
- $27 \div 100 = \underline{0.27}$
- $43.2 \div 100 = \underline{0.432}$
- $84.6 \div 100 = \underline{0.846}$
- $732.1 \div 100 = \underline{7.321}$
- $5.9 \div 100 = \underline{0.059}$
- $300.6 \div 100 = \underline{3.006}$