

Dividing by Powers of 10

Fill in the missing information below. You may use a calculator.

	Number Sentence	Number Sentence Without Exponents	Quotient/ Answer	Observations (How did the placement of the decimal change?)
1	$78.5 \div 10$	$78.5 \div 10$	7.85	The decimal moved one place to the left in the answer
2	$7.85 \div 10^2$	$78.5 \div (10 \times 10)$; $78.5 \div 100$	0.0785	The decimal moved two places to the left in the answer
3	$785 \div 10^3$	$78.5 \div (10 \times 10 \times 10)$; $78.5 \div 1000$	0.785	The decimal moved three places to the left in the answer
4	$23.4 \div 10^4$	$23.4 \div (10 \times 10 \times 10 \times 10)$; $23.4 \div 10,000$	0.00234	The decimal moved four places to the left in the answer
5	$2.34 \div 10^5$	$23.4 \div (10 \times 10 \times 10 \times 10 \times 10)$; $23.4 \div 100,000$	0.0000234	The decimal moved five places to the left in the answer
6	$234 \div 10^2$	$23.4 \div (10 \times 10)$; $23.4 \div 100$	2.34	The decimal moved two places to the left in the answer
7	$27.6 \div 10^3$	$27.6 \div (10 \times 10 \times 10)$; $27.6 \div 1000$	0.0276	The decimal moved three places to the left in the answer
8	$276 \div 10^4$	$27.6 \div (10 \times 10 \times 10 \times 10)$; $27.6 \div 10,000$	0.0276	The decimal moved four places to the left in the answer
9	$2.76 \div 10^5$	$27.6 \div (10 \times 10 \times 10 \times 10 \times 10)$; $27.6 \div 100,000$	0.0000276	The decimal moved five places to the left in the answer

Explain to a partner: Why there are patterns of the placement of the decimal point when a decimal is divided by a power of 10.

Discuss your best explanation and write it below. You may continue on the back if needed.

The exponent matches the number of places the decimal moves to the right in the quotient we can generalize that when a number is divided by a power of ten, the decimal moves to the left the same number of places in the quotient/answer.
