**Number**

**Unit 2 Line Master 1a**

Multiplying and Dividing   
 by Powers of 10

Use mental math to explore multiplying and dividing by powers of 10.   
Verify your thinking with a calculator.

1. Complete each chart. In part a), the first row is done for you.

a)

|  |  |  |
| --- | --- | --- |
| **Number** | **Operation** | **Answer** |
| 34.912 | × 10 | 349.12 |
| 34.912 | × 100 |  |
| 34.912 | ÷ 10 |  |
| 34.912 | ÷ 100 |  |
| 34.912 | ÷ 1000 |  |

What do you notice?

b)

|  |  |  |
| --- | --- | --- |
| **Number** | **Operation** | **Answer** |
| 0.8531 | × 10 |  |
| 0.8531 | × 100 |  |
| 0.8531 | ÷ 10 |  |
| 0.8531 | ÷ 100 |  |
| 0.8531 | ÷ 1000 |  |

What do you notice?

**Number**

**Unit 2 Line Master 1b**

Multiplying and Dividing   
 by Powers of 10 (cont’d)

c)

|  |  |  |
| --- | --- | --- |
| **Number** | **Operation** | **Answer** |
| 90.47 | × 10 |  |
| 90.47 | × 100 |  |
| 90.47 | ÷ 10 |  |
| 90.47 | ÷ 100 |  |
| 90.47 | ÷ 1000 |  |

What do you notice?

2. Pat wants to convert 453 m to kilometres.   
Sam says to divide by 1000 while Chris says to multiply by .

a) Explain why they are both correct.

**Number**

**Unit 2 Line Master 1c**

Multiplying and Dividing   
 by Powers of 10 (cont’d)

b) How many kilometres is 453 m?

c) To convert a distance measured in kilometres to metres,   
 would you multiply or divide?   
 By what number? Explain your thinking.

**Number**

**Unit 2 Line Master 1d**

Multiplying and Dividing   
 by Powers of 10 (cont’d)

3. Complete the following charts.

a)

|  |  |  |
| --- | --- | --- |
| **Number Sentence** | **Expanded Form** | **Value** |
| 89 × 103 | 89 × 1000 |  |
| 89 × 102 | 89 × 100 |  |
| 89 × 101 | 89 × 10 |  |
| 89 × 100 |  |  |
| 89 × 10-1 |  |  |
| 89 × 10-2 |  |  |
| 89 × 10-3 |  |  |

What do you notice?

**Number**

**Unit 2 Line Master 1e**

Multiplying and Dividing   
 by Powers of 10 (cont’d)

b)

|  |  |  |
| --- | --- | --- |
| **Number Sentence** | **Expanded Form** | **Value** |
| 89 ÷ 103 | 89 ÷ 1000 |  |
| 89 ÷ 102 |  |  |
| 89 ÷ 101 |  |  |
| 89 ÷ 100 |  |  |
| 89 ÷ 10-1 |  |  |
| 89 ÷ 10-2 |  |  |
| 89 ÷ 10-3 |  |  |

What do you notice?