

Use the place-value chart and the prefixes chart to complete the following statements and fill in the missing exponents.

| Prefixes |                        |
|----------|------------------------|
| tera-    | trillion ( $10^{12}$ ) |
| giga-    | billion ( $10^9$ )     |
| mega-    | million ( $10^6$ )     |
| kilo-    | thousand ( $10^3$ )    |
| hecto-   | hundred ( $10^2$ )     |
| deca-    | ten ( $10^1$ )         |
| uni-     | one ( $10^0$ )         |

- The distance from Chicago to New Orleans is about  $10^3$ , or one thousand, miles.
- A millionaire has at least  $10^6$  dollars.
- The Moon is about 240,000, or 24  $\times 10^4$ , miles from Earth.
- A computer with a 1-terabyte hard drive can store approximately  $10^{12}$ , or one trillion, bytes of information.
- The Sun is about  $89 \times 10^7$ , or 890,000,000, miles from Saturn.
- A 5-megapixel camera has a resolution of  $5 \times 10^6$ , or 5 million pixels.
- What patterns do you notice in the following number sentences?

$$42 \times 100 = 42 \times 10^2 = 4,200$$

$$42 \times 1,000 = 42 \times 10^3 = 42,000$$

$$42 \times 10,000 = 42 \times 10^4 = 420,000$$

Sample answer: An extra zero is attached to the answer each time. The number of zeros is the same as the exponent.

LESSON 1.1