Algebra • Powers of 10 and Exponents

You can represent repeated factors with a base and an exponent.

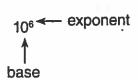
Write $10 \times 10 \times 10 \times 10 \times 10 \times 10$ in exponent form.

10 is the repeated factor, so 10 is the base.

The base is repeated 6 times, so 6 is the exponent.

$$10 \times 10 \times 10 \times 10 \times 10 \times 10 = 10^6$$

A base with an exponent can be written in words.



Write 106 in words.

The exponent 6 means "the sixth power."

106 in words is "the sixth power of ten."

You can read 102 in two ways: "ten squared" or "the second power of ten."

You can also read 103 in two ways: "ten cubed" or "the third power of ten."

Write in exponent form and in word form.

1. $10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

exponent form: _____ word form: _

word form:

2. $10 \times 10 \times 10$

exponent form: _____

word form:

3. $10 \times 10 \times 10 \times 10 \times 10$

exponent form: __

word form: _____

Find the value.

4. 10⁴

5. 2×10^3

6. 6×10^2

Lesson 10

CC.5.NBT-2

Powers of 10 and Exponents

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²arei iymb irout Write in exponent form and word form.

1.
$$10 \times 10 \times 10$$

2.
$$10 \times 10$$

3.
$$10 \times 10 \times 10 \times 10$$

exponent form:

10³

exponent form: _____

exponent form: _____

word form: the third power

word form:

word form: _____

Find the value.

of ten

5.
$$4 \times 10^{2}$$

6.
$$9 \times 10^4$$

9.
$$5 \times 10^{1}$$

10.
$$7 \times 10^3$$

11.
$$8 \times 10^{\circ}$$

Problem Solving REAL WORLD

- 12. The moon is about 240,000 miles from Earth. What is this distance written as a whole number multiplied by a power of ten?
- 13. The sun is about 93×10^6 miles from Earth. What is this distance written as a whole number?