8 Practice • • • • • • • • • • Multiplication Sequences

A **sequence** is a set of numbers which follows a mathematical rule.

5, 10, 20, 40, …

In this multiplication sequence, each term after the first is multiplied by 2.

Directions: Use the information on page 33 to help you complete these sequences by filling in the missing information.

1. 4, 8, 16, 32, _____, _____, _____, _____

2. 3, 9, 27, _____, _____, _____, _____

3. 4, 12, 36, _____, _____, _____, _____

4. 1, 5, 25, 125, _____, _____, _____, _____

5. 1, 4, 16, 64, _____, _____, _____, _____

6. 1, 7, 49, _____, _____, _____, _____

Directions: In these sequences two operations are used. Write a mathematical explanation and math sentence. Complete each sequence.

7. 2, 5, 11, 23, _____, _____, _____, _____

Written Explanation: _____

_____

Math Sentence: _____

8. 3, 5, 9, 17, 33, _____, _____, _____, _____

Written Explanation: _____

_____

Math Sentence: _____

9. 4, 11, 32, 95, _____, _____, _____, _____

Written Explanation: _____

_____

Math Sentence: _____

10. 5, 13, 29, 61, _____, _____, _____, _____

Written Explanation: _____

_____

Math Sentence: _____

8 Practice • • • • • • • • • • Multiplying with Exponents

A number multiplied by itself can be written as an exponent.

The **exponent** tells how many times to multiply the base number by itself.

5^2 is 5 squared or "5 to the second power."

$5^2 = 25$

5^3 is "5 cubed" or "5 to the third power."

$5^3 = 5 \times 5 \times 5$

$5 \times 5 = 25$

$25 \times 5 = 125$

Directions: For each of the terms below, write an equation and solve it. The first one is done for you.

1. 3^2 3 x 3 = 9

2. 7^2 _____ x _____ = _____

3. 4^2 _____ x _____ = _____

4. 9^2 _____ x _____ = _____

5. 2^2 _____ x _____ = _____

6. 8^2 _____ x _____ = _____

7. 10^2 _____ x _____ = _____

8. 6^2 _____ x _____ = _____

9. 11^2 _____ x _____ = _____

10. 12^2 _____ x _____ = _____

Directions: For each of the terms below, write two equations and solve them. The first one is done for you.

11. 2^3 2 x 2 = 4

4 x 2 = 8

$2^3 = 8$

12. 3^3 _____ x _____ = _____

_____ x _____ = _____

3^3 = _____

13. 5^3 _____ x _____ = _____

_____ x _____ = _____

5^3 = _____

14. 7^3 _____ x _____ = _____

_____ x _____ = _____

7^3 = _____

15. 4^3 _____ x _____ = _____

_____ x _____ = _____

4^3 = _____

16. 6^3 _____ x _____ = _____

_____ x _____ = _____

6^3 = _____

17. 10^3 _____ x _____ = _____

_____ x _____ = _____

10^3 = _____

18. 9^3 _____ x _____ = _____

_____ x _____ = _____

9^3 = _____

19. 11^3 _____ x _____ = _____

_____ x _____ = _____

11^3 = _____

20. 12^3 _____ x _____ = _____

_____ x _____ = _____

12^3 = _____