

Chapter 1 Study Guide

1. Evaluate the expression.

$$-8^2 + 18 \div 3 = \square$$

$$\begin{aligned} & -8^2 + 18 \div 3 \\ & -64 + 18 \div 3 \\ & -64 + 6 \\ & \quad \textcircled{-58} \end{aligned}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)> Question #2

2. Simplify the expression.
- Write your answer as a power.

$$\frac{3^7}{3^5} = \square$$

subtract exponents

$$\textcircled{3^2}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

3. Simplify the expression.
- Write your answer as a power.

$$4^8 \cdot 4^7 = \square$$

add exponents

$$\textcircled{4^{15}}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

4. Simplify the expression.
- Write your answer as a power.

$$(6^4)^2 = \square$$

multiply exponents

$$\textcircled{6^8}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

5. Simplify the expression. Write your answer as a product of powers.

$$(6 \cdot 3)^7 = \square$$

rewrite exponent to each base

$$\textcircled{6^7 \cdot 3^7}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

6. Simplify the expression. Write your answer as a power.

$$7^4 \cdot 7^0 = \square$$

$$7^4 \cdot \cancel{7^0} 1$$

$$7^4 \cdot 1 =$$

$$\boxed{7^4}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

7. Find the absolute value.

$$|19| = \square$$

$$\boxed{19}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

8. Find the absolute value.

$$\left| -\frac{1}{7} \right| = \square$$

$$\boxed{\frac{1}{7}}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

9. Complete the statement using $<$, $>$, or $=$.

$$|-8.6| \quad \boxed{} \quad |8.5|$$

$$8.6 > 8.5$$

$$\boxed{<} \quad \boxed{>} \quad \boxed{=}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

10. Write the product using exponents.

$$\left(-\frac{3}{10}\right) \cdot \left(-\frac{3}{10}\right) = \square$$

$$\boxed{\left(-\frac{3}{10}\right)^2}$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

11. Write the product using exponents.

$$4.9 \cdot 4.9 = \square$$

$$4.9^2$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

12. Latitude is a measure of how far a location on Earth's surface is above or below the equator. Houston, Texas is located at a latitude of about 29.760° . Perth, Australia is located at a latitude of about -31.956° .

Which city is closer to the equator?

Houston, Texas

Perth, Australia

equator = 0°

29.760 is closer to 0

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

13. Simplify the expression. Write your answer as a power.

$$\frac{4^3 \cdot 4^7}{4^2} = \square$$

$$\frac{4^{10}}{4^2} = 4^8$$

Grade 7: FL 2023>Chapter 1>Chapter 1: Chapter Test (1 - 18)

14. Complete the statement using $<$, $>$, or $=$.

change to decimal

$$|4\frac{2}{5}| \quad > \quad | -4\frac{1}{3} |$$

$$4.4$$

$$4.\bar{3}$$

$<$ $>$ $=$

~~Order~~ Write the product using exponents.

$$\frac{3^2 \cdot 3^6}{3^2} \cdot \frac{3^5}{3}$$

$$\frac{3^8}{3^2} \cdot \frac{3^5}{3^1}$$

$$3^6 \cdot 3^4 = 3^{10}$$

order from least to greatest.

$$-2.1, |5|, |4|, 8, -\frac{7}{12}$$

$$-2.1, 5, 4, 8, -0.58\bar{3}$$

$$-2.1, -\frac{7}{12}, |4|, |5|, 8$$

VOCAB:

Define the following:

1. Power - product of repeated factors
2. Base - the big #
the number that is repeated
3. Exponent - the number of times the base is multiplied
4. Product - the answer to a multiplication problem
5. Quotient - the answer to a division problem
6. Integers - positive or negative whole numbers
7. Rational numbers - positive or negative fractions or decimals
8. Absolute value - the distance from 0 on the number line

17. Which expressions simplify to 7^9 using the Product of Powers and the Quotient of Powers Properties?

$7^3 \cdot 7^3 = 7^6$

$\frac{7^{27}}{7^3} = 7^{24}$

$7^6 \cdot 7^3 = 7^9$

$\frac{7^6}{7^3} = 7^3$

$7^{12} \cdot 7^3 = 7^{15}$

$\frac{7^{12}}{7^3} = 7^9$