

Warmup

1. Evaluate 1^5 2. Write 7^4 as a product of the same factor.3. Use exponents to write $3 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 2$ 4. Simplify the expression: $4 \cdot 4 \cdot x \cdot x \cdot y \cdot 4 \cdot x \cdot y \cdot x$ 5. $(\quad)^2 = 16$

I. Exponents

base^{exponent} $bbbbbb = \underline{\quad}$

Common factors

The tells how many times the is used as a factor.The is the common factor.

To simplify expressions with exponents:

1. Find the product of numeric factors.
2. Write the variable factors with exponents.
(when possible, write them in alphabetical order)

4^3

$\left(\frac{2}{5}\right)^2$

6. 7^3

7. $\left(\frac{1}{3}\right)^4$

II. Variables with Exponents

$2^5 stsrt =$

10. $5^2 cd \cdot 5cd$

$9xxy \cdot 9yz =$

11. $3^2 aac \cdot 3^2 cc$

III. Roots

$$4^2 = 16$$

$$\sqrt{16} = \underline{\hspace{2cm}}$$

The inverse operation of raising to a power is called **taking the root**.

$$\sqrt{9} = \underline{\hspace{2cm}}$$
 What number multiplied by itself is 9?

$$\sqrt{64} = \underline{\hspace{2cm}}$$
 What number multiplied by itself is 64?

$$\sqrt{100}$$

$$\sqrt[3]{27}$$

$$13. \sqrt{121}$$

$$14. \sqrt[4]{16}$$

IV. Simplifying Expressions with Squares and Roots

$$(4 + 3 \times 1)^2 + 7 =$$

$$24 - (3 - 2)^2 \div (5 \cdot 1)$$

$$16. -2(2 + 3 + 5) + 8^2 - \sqrt[3]{64} + \frac{8}{-4}$$

$$17. 5(8) + 3^3$$

IV. Practice

18

19

20

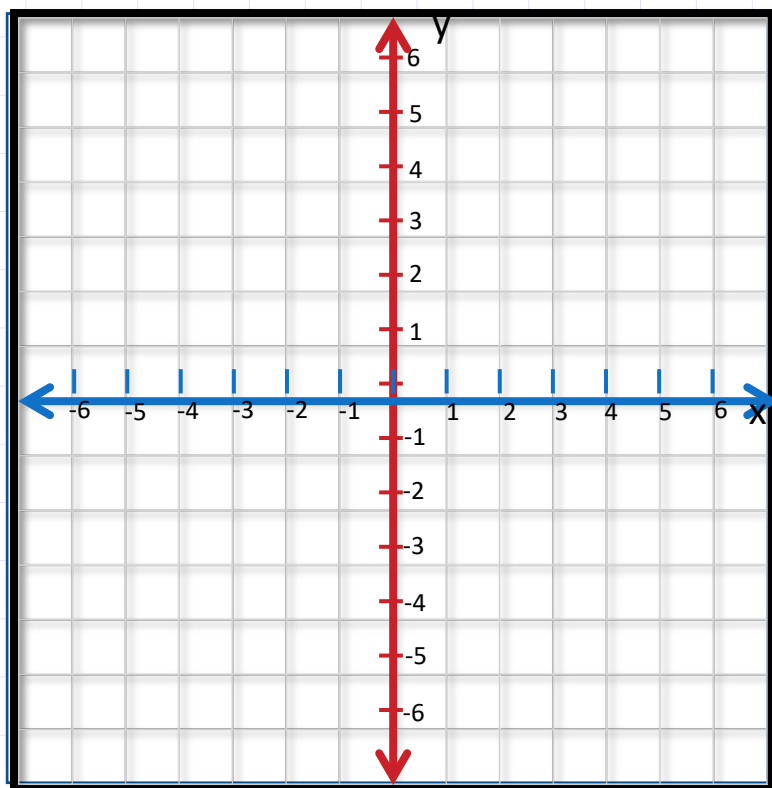
21

22

23

24

25



26

27

28

29

30