

1. Write the following expressions in a shorter way:

Example: $7 \cdot 7 \cdot 7 \cdot 8 \cdot 8 \cdot 8 \cdot 8 \cdot 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 = 7^3 \cdot 8^4 \cdot 9^5$

a. $2 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 7 \cdot 7$;

b. $\underbrace{3 \cdot 3 \cdot \dots \cdot 3}_n \cdot \underbrace{5 \cdot 5 \cdot \dots \cdot 5}_m$

c. $\underbrace{(-4) \cdot (-4) \cdot \dots \cdot (-4)}_k \cdot \underbrace{6 \cdot 6 \cdot \dots \cdot 6}_l$

2. Evaluate;

Example: $2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$

a. 2^3 ; b. 4^2 ; c. $\left(\frac{1}{2}\right)^5$; d. 0.1^2 ; e. 5^3 ;

3. What should be x equal to in the following equations:

a. $2^x = 8$; b. $\left(\frac{1}{4}\right)^x = \frac{1}{64}$; c. $3^x = 9$;

d. $x^2 = 4$; e. $x^3 = 27$;

4. Evaluate:

a. $2^3 \cdot 2^2 =$

b. $5^2 \cdot 5 =$

c. $2^5 \cdot 2^3 \cdot 2 =$

d. $(2^3)^2 =$

e. $(3^7)^2 =$

f. $(n^5)^3 =$

5. How many three-digit numbers can be composed from digits 3, 4, 5, without repetitions (it means that all digits in the number should be different). How many of these numbers will be odd? Even? Will be divisible by 3, by 6, by 5?
6. How many three-digit numbers can be composed from digits 3, 4, 5, if the repetition is allowed (it means that numbers 333 or 344 are allowed).

7. How many three-digit numbers can be composed from digits 3, 0, 5, if the repetition is allowed (it means that numbers 303 or 300 are allowed).
8. On a graph paper draw a square with the area equal to 2 cells, 4 cells, 5, 8, 9, 10 cells.

