

Math 4b. Homework



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. $\underbrace{3 \cdot 3 \cdot \dots \cdot 3}_{6 \text{ times}} \cdot \underbrace{5 \cdot 5 \cdot \dots \cdot 5}_{6 \text{ times}} =$

c. $\underbrace{(-4) \cdot (-4) \cdot \dots \cdot (-4)}_{5 \text{ times}} \cdot \underbrace{6 \cdot 6 \cdot \dots \cdot 6}_{4 \text{ times}} =$

2. Represent as a fraction:

Examples:

$$3^{-2} = \frac{1}{3^2} = \frac{1}{9}; \quad 2^{-3} = \frac{1}{2^3} = \frac{1}{8}$$

a. 4^{-2}

b. 3^{-3}

c. 2^{-5}

d. 5^{-2}

3. Evaluate:

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

a. 2^3

b. 4^2

c. $\left(\frac{1}{2}\right)^3$

d. 0.1^2

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

a. $2^x = 8$

b. $x^2 = 4$

5. Evaluate:

Example: $2^3 \cdot 2^2 = 2^{2+3} = 2^5 = 32$

$$5^2 \cdot 5 =$$

$$(2^3)^2 =$$

$$2^2 \cdot 2^2 \cdot 2 =$$

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

6. True or false?

a. $3^4 \cdot 3^2 = 3^8$

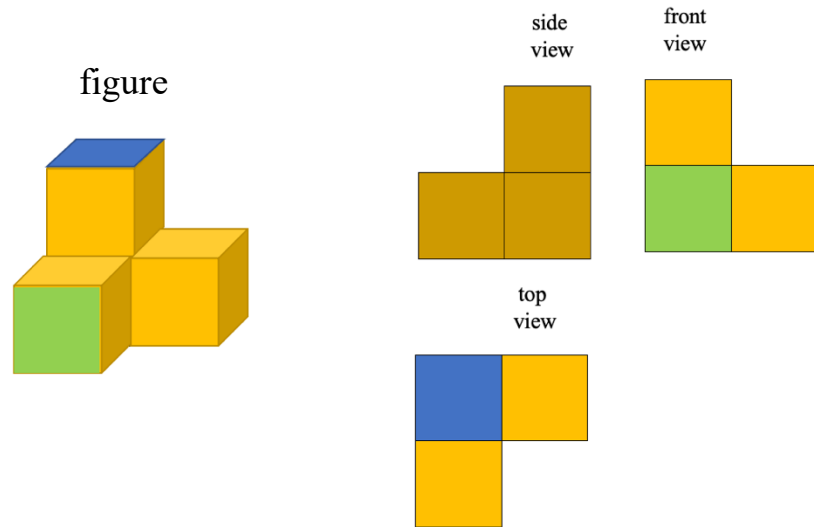
b. $(3^2)^3 = 3^6$

c. $\frac{1}{3^{-2}} = 3^{-2}$

7. Write down the first five powers of 2 and the first five powers of 3. (Do not use calculator.)

8. On a graph paper below draw **top, side and front views** of a figure (use different colors)

Example:



figure