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## MULTIPLYING EXPONENTS WORKSHEETS

Write the answer as a single exponent for the questions from 1-5.

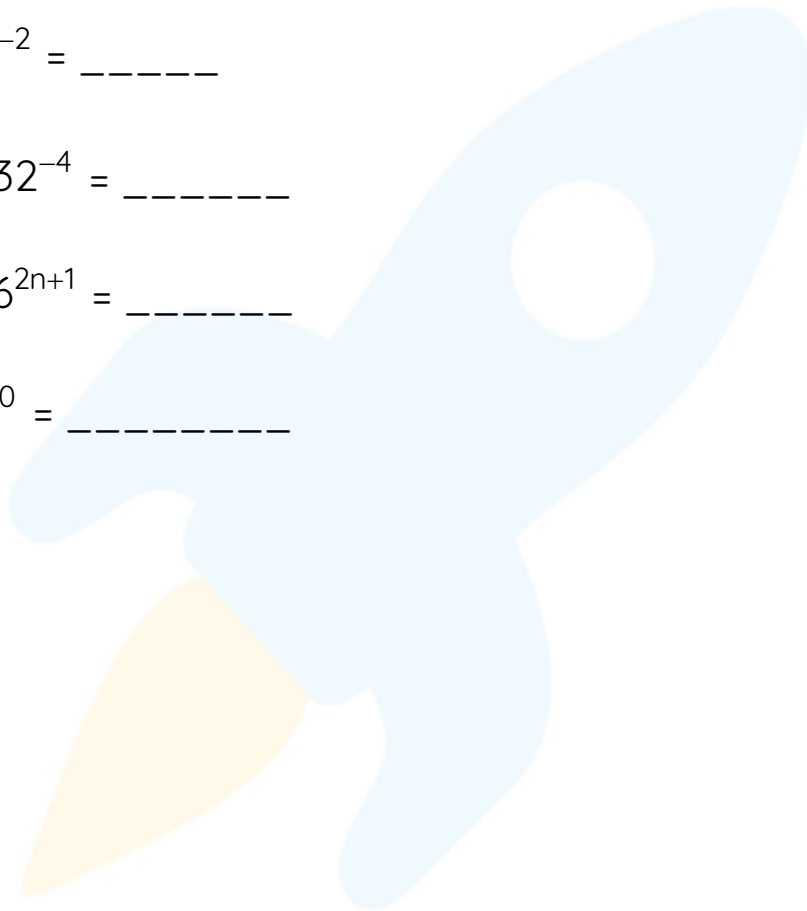
1)  $2^3 \times 2^7 =$  \_\_\_\_\_

2)  $((-3)^2)^{-2} =$  \_\_\_\_\_

3)  $256^2 \times 32^{-4} =$  \_\_\_\_\_

4)  $4^{n-1} \times 16^{2n+1} =$  \_\_\_\_\_

5)  $d^2 \times d^{-10} =$  \_\_\_\_\_



- 6) The area occupied by a certain type of a bacteria is 0.000000006 square meters. Find the area occupied by 100 such bacteria and express your answer in scientific notation.



- 7) Simplify  $(8.3 \times 10^{-3}) \times (3.2 \times 10^{-5})$  and express the answer in scientific notation.

- 8) If  $12^4 \times 9^3 \times 4 = 2^a \times 3^b$ , find the value of  $a + b$ .

- 9) Find the value of  $(x^a)^{(b-c)} \cdot (x^b)^{(c-a)} \cdot (x^c)^{(a-b)}$ .

- 10) If  $7^{2x+1} \cdot 7^2 = 343$ , find  $x$ .



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in an interesting way,  
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## Why choose Cuemath?

"Cuemath is a valuable addition to our family. We love solving puzzle cards. My daughter is now visualizing maths and solving problems effectively!"

- Gary Schwartz

"Cuemath is great because my son has a one-on-one interaction with the teacher. The instructor has developed his confidence and I can see progress in his work. One-on-one interaction is perfect and a great bonus."

- Kirk Riley

"I appreciate the effort that miss Nitya puts in to help my daughter understand the best methods and to explain why she got a problem incorrect. She is extremely patient and generous with Miranda."

- Barbara Cabrera

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**ANSWERS**

|     |                                  |
|-----|----------------------------------|
| 1)  | $2^{10}$                         |
| 2)  | $(-3)^{-4}$                      |
| 3)  | $2^{-4}$                         |
| 4)  | $4^{3n+1}$ (or) $2^{6n+2}$       |
| 5)  | $d^{-8}$                         |
| 6)  | $6 \times 10^{-7}$ square meters |
| 7)  | $2.656 \times 10^{-7}$           |
| 8)  | 20                               |
| 9)  | 1                                |
| 10) | 0                                |

**FUN FACT**

1. We can convert a negative exponent into the positive exponent using the law  $a^{-m} = \frac{1}{a^m}$ .
2.  $a^0 = 1$ , for any  $a$ .
3. We can add the exponents when their bases are same in case of multiplication.

