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# MULTIPLYING EXPONENTS WORKSHEETS

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

1)  $(-7)^3 \times (-7)^{-5} = \text{-----}$

2)  $5^3 \times 25 = \text{-----}$

3)  $(8)^{\frac{1}{3}} \times 4^{\frac{1}{2}} \times 16^{\frac{1}{4}} = \text{-----}$

4)  $(a^2)^5 \times (a^6)^2 = \text{-----}$

5)  $2x^{-3} \cdot 8x^3 = \text{-----}$

6) David is struck with solving the following equation for x.  
Can we help him?

$$\left(\frac{1}{4}\right)^{8b} \cdot \left(\frac{1}{4}\right)^{-3} = 16^{b+8}$$



7) Simplify the following expression and express the answer in scientific notation:

$$(8.5 \times 10^6) \times (7.3 \times 10^5)$$

8) If  $125 \times 25 \times 625 = 5^{-x}$ , find the value of  $x$ .

9) If  $3^2 \times 12^3 \times 6^{-2} = 2^x \cdot 3^y$ , find the value of  $x - y$ .

10) Solve the following equation for  $x$ .

$$(81)^{-5} \cdot (729)^{3-x} = (9)^{5x}$$



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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)	$(-7)^{-2}$
2)	$5^5$
3)	$2^3$
4)	$a^{22}$
5)	$2^4$
6)	$b = -\frac{13}{10}$
7)	$6.205 \times 10^{12}$
8)	$x = -9$
9)	-1
10)	$x = -\frac{1}{8}$

**FUN FACT**

Some important rules of exponents are:

1.  $a^m \cdot a^n = a^{m+n}$

2.  $\frac{a^m}{a^n} = a^{m-n}$

3.  $a^0 = 1$

4.  $a^{-n} = \frac{1}{a^n}$

5.  $(a^m)^n = a^{mn}$

6.  $(ab)^m = a^m b^m$

7.  $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$

