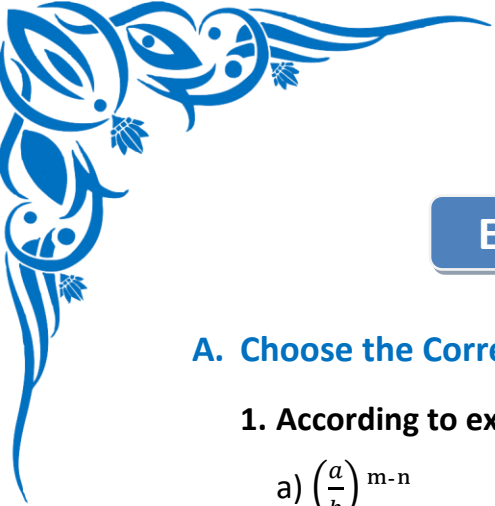




Extension of Laws of Exponents

A. Choose the Correct Answer:

1. According to extended laws of exponents, $\left(\frac{a}{b}\right)^m \times \left(\frac{a}{b}\right)^n$ equals:

- a) $\left(\frac{a}{b}\right)^{m-n}$
- b) $\left(\frac{a}{b}\right)^{m+n}$
- c) $\left(\frac{a}{b}\right)^{mn}$
- d) $\left(\frac{a}{b}\right)^{n/m}$

2. The simplified form of $\left(\frac{3}{4}\right)^2 \times \left(\frac{4}{3}\right)^2$ is:

- a) 1
- b) 2
- c) $\frac{3}{2}$
- d) 4

3. $\left(\frac{2}{5}\right)^3 \div \left(\frac{2}{5}\right)^2$ simplifies to:

- a) $\left(\frac{2}{5}\right)^5$
- b) $\left(\frac{2}{5}\right)^6$
- c) $\left(\frac{2}{5}\right)^1$
- d) $\left(\frac{5}{2}\right)^1$

4. $(7^2)^3$ equals:

- a) 7^6
- b) 7^5
- c) 7^9
- d) 14^6

5. The expression $\frac{a^m b^n}{a^p b^q}$ simplifies to:

- a) $a^{m+p} b^{n+q}$
- b) $a^{m-p} b^{n-q}$
- c) $a^{p-m} b^{q-n}$
- d) $a^{mp} b^{nq}$

B. Write the Missing Terms to Complete the Sentences:

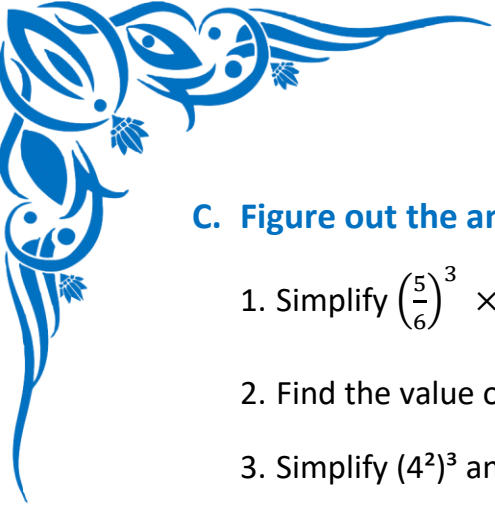
1. $\left(\frac{a}{b}\right)^m \div \left(\frac{a}{b}\right)^n = \left(\frac{a}{b}\right)^{\dots}$

2. $\frac{x^m y^n}{x^p y^q} = x^{m-p} \times y^{\dots}$

3. $(2^3)^4 = 2^{\dots}$

4. $\left(\frac{a}{b}\right)^0 = \underline{\hspace{2cm}}$

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



C. Figure out the answers to these questions:

1. Simplify $\left(\frac{5}{6}\right)^3 \times \left(\frac{5}{6}\right)^2$
2. Find the value of $\left(\frac{2}{7}\right)^5 \div \left(\frac{2}{7}\right)^2$
3. Simplify $(4^2)^3$ and write the answer
4. Evaluate $\left(\frac{3}{5}\right)^4 \times \left(\frac{5}{3}\right)^4$
5. Simplify $(x^2y^3)^2 \div (x^3y^2)$

D. Mark each sentence with a True (✓) or False (X):

1. $\left(\frac{a}{b}\right)^m \times \left(\frac{a}{b}\right)^n = \left(\frac{a}{b}\right)^{m+n}$. _____
2. $\left(\frac{2}{3}\right)^3 \div \left(\frac{2}{3}\right)^2 = \left(\frac{2}{3}\right)^1$. _____
3. $\left(\frac{5}{6}\right)^2 \times \left(\frac{5}{6}\right)^2 = \left(\frac{5}{6}\right)^4$. _____
4. $(ab)^m = a^m b^m$ and $\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}$. _____
5. $(x^2y^3)^2 = x^4y^6$. _____

E. Challenge yourself with these questions:

1. Find the value of $\left(\frac{3}{7}\right)^3 \times \left(\frac{7}{3}\right)^3$
2. Simplify $\left(\frac{6}{11}\right)^4 \div \left(\frac{6}{11}\right)^2$
3. Find the value of $(5^2)^3 \div 5^4$
4. Simplify $(a^3b^2)^2 \div (a^2b^3)$
5. Simplify $\left(\frac{2}{5}\right)^3 \times \left(\frac{5}{2}\right)^3$