Maths with Melissa

Indices: Multiplication and Division Worksheet

1. Simplify: $3^4 \times 3^2$

2. Simplify: $5^7 \div 5^3$

3. Simplify the expression: $2^5 \times 2^3 \div 2^4$

4. Evaluate: $7^6 \div 7^2 \times 7^3$

5. Simplify: $(4^3 \times 4^2) \div 4^4$

6. If $x = 2^3$ and $y = 2^5$, find the value of $x \times y \div 2^4$

7. Simplify the following: $10^8 \div 10^5 \times 10^2$

8. Write the following as a single power: $a^6 \div a^2 \times a^3$

9. Simplify: $6^3 \times 6^0 \div 6^2$

10. If $m = 4^2$ and $n = 4^5$, what is $m \div n$ in index form?

Answer Key

1. $3^4 \times 3^2 = 3^{4+2} = \mathbf{3^6}$
2. $5^7 \div 5^3 = 5^{7-3} = \mathbf{5^4}$
3. $2^5 \times 2^3 \div 2^4 = 2^{5+3-4} = \mathbf{2^4}$
4. $7^6 \div 7^2 \times 7^3 = 7^{6-2+3} = \mathbf{7^7}$
5. $(4^3 \times 4^2) \div 4^4 = 4^{3+2-4} = 4^1 = \mathbf{4}$
6. $x \times y \div 2^4 = 2^3 \times 2^5 \div 2^4 = 2^{3+5-4} = 2^4 = \mathbf{16}$
7. $10^8 \div 10^5 \times 10^2 = 10^{8-5+2} = \mathbf{10^5}$
8. $a^6 \div a^2 \times a^3 = a^{6-2+3} = \mathbf{a^7}$
9. $6^3 \times 6^0 \div 6^2 = 6^{3+0-2} = 6^1 = \mathbf{6}$
10. $m \div n = 4^2 \div 4^5 = 4^{2-5} = \mathbf{4^{-3}}$