Dividing same-base powers

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Simplify $2^8 \div 2^3$ and evaluate. [2 marks]

$8 - 3 = 5$.

Answer: $2^5 = 32$

2. Write $10^6 \div 10^2$ as one power. [2 marks]

$6 - 2 = 4$.

Answer: 10^4

3. Evaluate $6^5 \div 6^4$. [2 marks]

$6^{5-4} = 6^1 = 6$.

Answer: 6

4. Evaluate $7^3 \div 7^3$. [2 marks]

The same nonzero number is divided by itself.

Answer: 1

5. Simplify $3^7 \div (3^2 \times 3^3)$ and evaluate. [3 marks]

The denominator is 3^5.

$3^{7-5} = 3^2 = 9$.

Answer: $3^2 = 9$

6. Find n if $8^n \div 8^2 = 8^4$. [3 marks]

$n - 2 = 4$, so $n = 6$.

Answer: 6