

Using the Quotient rule to simplify Exponents

Review the example below to understand why we **SUBTRACT** the Exponents when dividing powers with the same base.

Example: 1) $2^6 \div 2^2 =$

$$= \frac{\cancel{2} \times \cancel{2} \times 2 \times 2 \times 2 \times 2}{\cancel{2} \times \cancel{2}} = 2^4$$

$$= \boxed{2^6 \div 2^2 = 2^{6-2} = 2^4}$$

Simplify the following. fill in the boxes with the correct number.

(Use the quotient rule: keep the base, Subtract the exponents)

1) $8^6 \div 8^4$

$$= 8$$

$$= 8$$

2) $b^8 \div b^5$

$$= b$$

$$= b$$

3) $11^9 \div 11^4$

$$= 11$$

$$= 11$$

4) $\frac{k^7}{k^5}$

$$= k$$

$$= k$$

5) $\frac{9^7}{9}$

$$9$$

$$9$$

6) $\frac{-4^5}{-4^3}$

$$-4$$

$$-4$$

7) $\frac{24b^{10}}{3b^3}$

$$b$$

$$b$$

8) $\frac{60a^5b^7}{12a^3b^5}$

$$a \quad b$$

$$a \quad b$$

9) $\frac{21x^3y^5}{7x^2y^3}$

$$x \quad y$$

$$x \quad y$$