

The slide features a light beige background with a blue grid pattern in the top-left and bottom-right corners. A dark blue rectangular area is positioned on the left side, containing the text. A vertical red bar is located on the far left edge of the slide.

Algebra 1

Chapter 7
Section 7-4

Quotients of Powers

$$\frac{b^6}{b^4} = \frac{\cancel{b \cdot b \cdot b \cdot b \cdot b \cdot b}}{\cancel{b \cdot b \cdot b \cdot b}} = b^2 = b^{6-4}$$

Simplify:

$$\frac{h^{11}}{h^{-3}} = h^{14}$$

$$\frac{4^3}{4^5} = 4^{-2} = \frac{1}{4^2} = \frac{1}{16}$$

Quotients of Powers

Simplify:

$$\frac{x^4y^2z^{13}}{x^3y^{10}z^{-8}} = \frac{xz^{21}}{y^8}$$

$$\frac{cd^2}{d^5e^3} = \frac{c}{d^3e^3}$$

$$\frac{2^43^2}{2^53^{-1}} = \frac{27}{2}$$

$$\frac{21p^5r^4}{14r^4p^7} = \frac{3}{2p^2}$$

Powers of Quotients

$$\left(\frac{3}{8}\right)^3 = \frac{3^3}{8^3} = \frac{27}{512}$$

$$\left(\frac{x^{20}}{10000}\right)^{\frac{3}{4}} = \frac{x^{\frac{60}{4}}}{10000^{\frac{3}{4}}} = \frac{x^{15}}{1000}$$

Powers of Quotients

$$\left(\frac{2x^{12}n^4w^3}{3n^7w^{-3}x^3}\right)^4 = \left(\frac{2x^9w^6}{3n^3}\right)^4 = \frac{16x^{36}w^{24}}{81n^{12}}$$

Powers of Quotients

$$\left(\frac{4y^{14}z^2}{a^8b^{-30}}\right)^{\frac{1}{2}} \cdot \left(\frac{y^9b^6}{3az^3}\right)^{-2} = \frac{18b^3z^7}{a^2y^{11}}$$

$$\frac{2y^7z}{a^4b^{-15}} = \frac{y^{-18}b^{-12}}{3^{-2}a^{-2}z^{-6}}$$

$$\frac{2b^{15}y^7z}{a^4} = \frac{9a^2z^6}{y^{18}b^{12}}$$