

$$\left(\frac{a}{b}\right)^{-2} = \frac{1}{\left(\frac{a}{b}\right)^2} = \frac{1}{\frac{a^2}{b^2}} = \frac{b^2}{a^2}$$

7-5 p. 440

Division Property

$$\frac{x^m}{x^n} = x^{m-n}$$

$$\frac{x^2}{x^7} = x^2 \cdot x^{-7} = x^{-5}$$

top exp. = bottom exp.

$$\frac{x^2}{x^7} = \frac{2-7}{x^{-5}}$$

$$1. \frac{y^3}{y^{10}} = y^{3-10} = y^{-7} = \frac{1}{y^7}$$

$$3. \left(\frac{m}{n}\right)^{-3} = \frac{m^{-3}}{n^{-3}} = \frac{n^3}{m^3} \quad \left(\frac{m}{n}\right)^{-3} = \left(\frac{n}{m}\right)^3 = \frac{n^3}{m^3}$$

$$9. \frac{2^4}{2^4} = 2^0 = 2^1$$

$$11. \frac{5^{2+3}}{5^2 5^3} = 5^0 = 1$$
$$= \frac{5^5}{5^5}$$

$$13. \frac{3^6}{3^8} = 3^{6-8} = 3^{-2} = \frac{1}{3^2}$$

$$15. \frac{n^{-1}}{n^{-4}} = n^{(-1+4)} = n^3$$

$$17. \frac{x^{11} y^3}{x^{11} y} = x^{(11-11)} y^{(3-1)} = x^0 y^2 = y^2$$

$$19. \frac{10 m^6 n^3}{5 m^2 n^7} = \frac{10}{5} \cdot \frac{m^6}{m^2} \cdot \frac{n^3}{n^7} = 2 m^4 n^{-4} = \frac{2 m^4}{n^4}$$

$$21. \frac{3^2 m^5 t^6}{3^5 m^7 t^5} = 3^{(2-5)} m^{(5-7)} t^{(6-5)} = 3^{-3} m^{-2} t^1 = \frac{t}{3^3 m^2}$$

$$23. \frac{12 a^{-1} b^6 c^{-3}}{4 a^5 b^{-1} c^5} = 3 a^{-6} b^7 c^{-8} = \frac{3 b^7}{a^6 c^8}$$

$$\# 34. \left(\frac{1}{a}\right)^3 = \frac{1^3}{a^3} = \frac{1}{a^3}$$

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$$\# 33. \left(\frac{3}{8}\right)^2 = \frac{3^2}{8^2}$$

$$\# 35. \left(\frac{3x}{y}\right)^4 = \frac{3^4 x^4}{y^4}$$

$$\# 37. \left(\frac{6}{5^2}\right)^3 = \frac{6^3}{5^6} = \frac{6^3}{5^{2(3)}}$$