

8-28-17 1st Trig

$$\textcircled{1} \frac{a^3 b^4}{a^2 b^5} = \frac{\cancel{a a a} \cancel{b b b b}}{\cancel{a a} \cancel{b b b b b}} = \frac{a}{b}$$

$$\textcircled{2} \frac{a^4 b}{a b^3} = \frac{\cancel{a a a a} \cancel{b}}{\cancel{a} \cancel{b b b}} = \frac{a^3}{b^2}$$

$$\textcircled{3} \frac{6 a^3 c^4}{8 a c^2} = \frac{\overset{3}{\cancel{6}} \cancel{a a a} \cancel{c c c c}}{\underset{4}{\cancel{8}} \cancel{a} \cancel{c c}} = \frac{3 a^2 c^2}{4}$$

Note: what does n^{-3} mean?

$$10^3 = 1000 \quad \frac{1}{n^3}$$

$$10^2 = 100$$

$$10^1 = 10$$

$$10^0 = 1$$

$$10^{-1} = .1 = \frac{1}{10}$$

$$10^{-2} = .01 = \frac{1}{100} = \frac{1}{10^2}$$

$$10^{-3} = .001 = \frac{1}{1000} = \frac{1}{10^3}$$

$$\textcircled{4} \quad a^2 \cdot n^3 \cdot a^{-4} \cdot n^{-2} = \frac{a^2 n^3}{a^4 n^2}$$

$$\frac{\cancel{aa} \cancel{nnn}}{\cancel{aaaa} \cancel{nn}}$$

$$\frac{n}{a^2}$$

$$\textcircled{5} \quad a^{-3} \cdot a^4 \cdot n^{-2} \cdot n^4$$

$$\frac{a^4 n^4}{a^3 n^2}$$

$$\frac{\cancel{aaaa} \cancel{nnnn}}{\cancel{aaa} \cancel{nn}}$$

$$an^2$$

$$\textcircled{6} \quad \frac{a^{-2} b^2}{a^3 b^{-2}} = \frac{b^2 b^2}{a^2 a^3}$$

$$\frac{b^4}{a^5}$$

$$\textcircled{7} \quad \frac{a^2 b^{-2} c^{-3}}{a^{-1} b^{-1} c^2} = \frac{a^2 a b}{b^2 c^3 c^2}$$

$$\frac{\cancel{aaa} \cancel{b}}{\cancel{b} \cancel{ccc} \cancel{cc}}$$

$$\frac{a^3}{bc^5}$$

$$\textcircled{8} \left(\frac{a^2 b}{c^3} \right)^{-2}$$

$$= \left(\frac{a^2 b}{c^3} \right)^{-1 \cdot 2}$$

$$\left(\frac{c^3}{a^2 b} \right)^2$$

$$\frac{c^3}{a^2 b} \cdot \frac{c^3}{a^2 b} = \frac{c^6}{a^4 b^2}$$

$$\textcircled{9} \left(\frac{2b}{c^2} \right)^{-2}$$

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

$$\frac{c^2}{2b} \cdot \frac{c^2}{2b} = \frac{c^4}{4b^2}$$

$$\textcircled{10} \left(\frac{a^{-2} b^2}{a b} \right)^{-2}$$

↓

$$\left(\frac{b^2}{a^2 a b} \right)^{-2} = \left(\frac{b}{a^3} \right)^{-2}$$

$$\left(\frac{b}{a^3} \right)^{-1 \cdot 2} = \left(\frac{a^3}{b} \right)^2 = \frac{a^3}{b} \cdot \frac{a^3}{b} = \frac{a^6}{b^2}$$

$$\textcircled{11} \left(\frac{3a^{-2}}{b^3c^{-1}} \right)^{-2}$$

$$\left(\frac{3c}{a^2b^3} \right)^{-1 \cdot 2}$$

$$\begin{aligned} \left(\frac{a^2b^3}{3c} \right)^2 &= \frac{a^2b^3}{3c} \cdot \frac{a^2b^3}{3c} \\ &= \frac{a^4b^6}{9c^2} \end{aligned}$$

$$\textcircled{12} \left(\frac{2}{5} \right)^{-2}$$

$$\left(\frac{5}{2} \right)^{-1 \cdot 2}$$

$$\left(\frac{2}{5} \right)^2 = \frac{2}{5} \cdot \frac{2}{5} = \frac{25}{4}$$

8-28-17 3rd Tr:y

$$\textcircled{1} \frac{a^3 b^2}{a b^3} = \frac{\cancel{aaa} \cancel{bb}}{\cancel{a} \cancel{bbb}} = \frac{a^2}{b}$$

$$\textcircled{2} \frac{6 a^3 b}{10 a^4 b^2} = \frac{\overset{3}{\cancel{6}} \cancel{aaa} \cancel{b}}{\underset{5}{\cancel{10}} \cancel{aaaa} \cancel{bb}} = \frac{3}{5ab}$$

Note: What does n^{-4} mean?

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$$10^{-1} = .1 = \frac{1}{10}$$

$$10^{-2} = .01 = \frac{1}{100} = \frac{1}{10^2}$$

$$10^{-3} = .001 = \frac{1}{1000} = \frac{1}{10^3}$$

$$\textcircled{3} a^{-3} \cdot a^5 = \frac{a^5}{a^3} = a^2$$

$$\textcircled{4} \quad a^{-3} \cdot b^2 \cdot a^2 \cdot b^{-4} = \frac{b^2 a^2}{a^3 b^4}$$

$$\frac{\cancel{b} \cancel{b} \cancel{a} \cancel{a}}{\cancel{a} \cancel{a} \cancel{b} \cancel{b} \cancel{b} \cancel{b}} = \frac{1}{a b^2}$$

$$\textcircled{5} \quad \frac{a^{-3} b^2}{a^4 b^{-1}} = \frac{b^2 b}{a^3 a^4} = \frac{b^3}{a^7}$$

$$\textcircled{6} \quad \frac{a^2 b^{-2} c^{-1}}{a b^{-5} c^2} = \frac{a^2 b^5}{b^2 c a c c}$$

$$= \frac{\cancel{a} \cancel{b} \cancel{b} \cancel{b} \cancel{b} \cancel{b}}{\cancel{b} \cancel{b} \cancel{c} \cancel{c} \cancel{c}}$$

$$= \frac{a b^3}{c^3}$$

$$\begin{aligned} \textcircled{7} \quad \frac{6a^{-4}b^2}{5^{-1}ab^{-1}} &= \frac{6 \cdot b^2 \cdot 5b}{a^4 \cdot a} \\ &= \frac{6 \cdot b \cdot b \cdot 5b}{a \cdot a \cdot a \cdot a} \\ &= \frac{30b^3}{a^5} \end{aligned}$$

$$\textcircled{8} \quad \left(\frac{2a^2}{c^3} \right)^{-2}$$

$$\left(\frac{2a^2}{c^3} \right)^{-1} \cdot 2$$

$$\left(\frac{c^3}{2a^2} \right)^2$$

$$\frac{c^3}{2a^2} \cdot \frac{c^3}{2a^2} = \frac{ccc}{2ca} \cdot \frac{ccc}{2ca} = \frac{c^6}{4a^4}$$

$$\textcircled{9} \quad \left(\frac{3a^2b}{5c} \right)^{-2}$$

$$\left(\frac{3a^2b}{5c} \right)^{-1} \cdot 2$$

$$\left(\frac{5c}{3a^2b} \right)^2 = \frac{5c}{3a^2b} \cdot \frac{5c}{3a^2b}$$

$$\frac{5c \quad 5c}{3aab \quad 3aab}$$

$$\frac{25c^2}{9a^4b^2}$$

$$\textcircled{10} \left(\frac{a^{-2} b^2}{a b^{-3}} \right)^{-2}$$

$$\left(\frac{b^2 b^3}{a^2 a} \right)^{-2}$$

$$\left(\frac{b^5}{a^3} \right)^{-1 \cdot 2}$$

$$\left(\frac{a^3}{b^5} \right)^2 = \frac{a^3}{b^5} \cdot \frac{a^3}{b^5} = \frac{a^6}{b^{10}}$$

$$\textcircled{11} \left(\frac{a^{-3} b^{-2}}{c^{-2} b} \right)^{-2}$$

$$\left(\frac{c^2}{a^3 b^2 b} \right)^{-2}$$

$$\left(\frac{c^2}{a^3 b^3} \right)^{-1 \cdot 2}$$

$$\left(\frac{a^3 b^3}{c^2} \right)^2 = \frac{a^3 b^3}{c^2} \cdot \frac{a^3 b^3}{c^2} = \frac{a^6 b^6}{c^4}$$

$$\textcircled{12} \left(\frac{2}{5}\right)^{-2}$$

$$\left(\frac{2}{5}\right)^{-1 \cdot 2}$$

$$\left(\frac{2}{5}\right)^2 = \frac{2}{2} \cdot \frac{5}{5} = \frac{25}{4}$$

8-28-17

4th Try

$$\textcircled{1} \frac{a^2 b^3}{a b^2} = \frac{\cancel{a} \cancel{a} \cancel{b} \cancel{b} \cancel{b}}{\cancel{a} \cancel{b} \cancel{b}} = \frac{ab}{1} = ab$$

$$\textcircled{2} \frac{8 a^3 b}{10 a b^2} = \frac{\overset{4}{\cancel{8}} \cancel{a} \cancel{a} \cancel{a} \cancel{b}}{\underset{5}{\cancel{10}} \cancel{a} \cancel{b} \cancel{b}} = \frac{4 a^2}{5 b}$$

Note: What does n^{-3} mean?

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$$10^{-2} = .01 = \frac{1}{100} = \frac{1}{10^2}$$

$$10^{-3} = .001 = \frac{1}{1000} = \frac{1}{10^3}$$

$$\textcircled{3} a^{-3} \cdot a^5 = \frac{a^5}{a^3} = \frac{\cancel{a} \cancel{a} \cancel{a} a a}{\cancel{a} \cancel{a} \cancel{a}} = a^2$$

$$\textcircled{4} a^{-2} \cdot b^2 \cdot a^4 \cdot b^{-3}$$

$$\frac{b^2 a^4}{a^2 b^3} = \frac{\cancel{b} \cancel{b} \cancel{a} \cancel{a} \cancel{a} \cancel{a}}{\cancel{a} \cancel{a} \cancel{b} \cancel{b} \cancel{b}} = \frac{a^2}{b}$$

$$\textcircled{5} \frac{n^{-3} a^2}{n a^{-2}} = \frac{a^2 a^2}{n^3 n} = \frac{a^4}{n^4}$$

$$\textcircled{6} \frac{a^{-3} b^2 c^{-1}}{a^2 b c^{-3}} = \frac{b^2 c^3}{a^3 c a^2 b}$$

$$= \frac{\cancel{b} \cancel{b} \cancel{c} \cancel{c} \cancel{c}}{a a a \cancel{c} a \cancel{b}} = \frac{b c^2}{a^5}$$

$$\textcircled{7} \left(\frac{2a^2}{c^4} \right)^{-2}$$

$$\left(\frac{2a^2}{c^4} \right)^{-1 \cdot 2}$$

$$\left(\frac{c^4}{2a^2} \right)^2 = \frac{c^4}{2a^2} \cdot \frac{c^4}{2a^2} = \frac{c^8}{4a^4}$$

$$\textcircled{8} \left(\frac{a^2 b}{c y^2} \right)^{-2}$$

$$\left(\frac{a^2 b}{c y^2} \right)^{-1 \cdot 2}$$

$$\left(\frac{c y^2}{a^2 b} \right)^2 = \frac{c y^2}{a^2 b} \cdot \frac{c y^2}{a^2 b} = \frac{c^2 y^4}{a^4 b^2}$$

$$\textcircled{9} \left(\frac{a^{-3} b}{a b^{-2}} \right)^{-2}$$

$$\left(\frac{b^2 b}{a^3 a} \right)^{-2}$$

$$\left(\frac{b^3}{a^4} \right)^{-1 \cdot 2} = \left(\frac{a^4}{b^3} \right)^2$$

$$\frac{a^4}{b^3} \cdot \frac{a^4}{b^3} = \frac{a^8}{b^6}$$

$$\textcircled{10} \left(\frac{3}{2}\right)^{-2}$$

$$\left(\frac{3}{2}\right)^{-1 \cdot 2}$$

$$\left(\frac{3}{2}\right)^2 = \frac{3}{2} \cdot \frac{3}{2} = \frac{9}{4}$$

$$\textcircled{11} \left(\frac{a^{-3}}{b}\right)^{-2}$$

$$\left(\frac{1}{a^3 b}\right)^{-1 \cdot 2}$$

$$(a^3 b)^2 = a^3 b \cdot a^3 b$$
$$a a a b a a b = a^6 b^2$$