How do we operate with various exponents?

Do Now

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

$= \sqrt{4a^3b^2}$

$= 2\sqrt{a^2 b^2}$

$= 2ab\sqrt{a}$

2) $\dfrac{4x^4}{2x^7}$

$= 2x^{-3}$

$= \dfrac{2}{x^3}$

$\left(\dfrac{1}{2x^3}\right)$

3) $\dfrac{3x^{-2}y^3}{6x^1y^5} =$

$\dfrac{x^{-2-1}y^{3-5}}{2} = \dfrac{x^{-3}y^{-2}}{2}$

$= \dfrac{1}{2x^3y^2}$

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

$= \dfrac{b^2}{a^1}$

5) $\dfrac{12a^3 b^{-2}}{a b^3}$

$= \dfrac{12a^3}{ab^3 b^2}$

$= \dfrac{12a^2}{b^5}$

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

$2^{-2} = \dfrac{1}{2^2}$

$= \dfrac{2^{-2} \cdot 4 a^{-2}}{b^{-6}}$

$\dfrac{4 b^6}{4 a^2}$

7) $\dfrac{(2a^2 b)(3a^{-2} b^2)}{12 a^3 b^{-4}}$

$= \dfrac{6 \cdot 1 \cdot b^3}{12 a^3 b^{-4}}$

$= \dfrac{6 b^7}{12 a^3} = \dfrac{b^7}{2 a^3}$

8) $\left(\dfrac{3}{ab}\right)^{-2} =$