Laws of Integral Indices

1. Simplify the following expressions and write the answers in positive indices.

    (a) $2^6 \times 2^3$

    (b) $3a^4 \times 9a^5$

    (c) $\dfrac{\left(x^2\right)^4}{x^5}$

    (d) $8a^3b^2 \div 2a^2b$

2. Simplify the following. Express the answers with positive indices.

    (a) $\left(\dfrac{xy}{z}\right)^5 \div \left(x^6z^{-2}\right)$

    (b) $\left(\dfrac{a^2b^3}{c}\right)^0 \left(a^3b\right)$

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

    (d) $\left(a^5b^{-2}\right)^{-3}\left(-a^{-2}b\right)^{-2}$

3. Simplify the following expressions and express the answers with positive indices.

    (a) $\dfrac{3a^3 \times 4a^4}{6a^5}$

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

    (c) $\dfrac{\left(4x^2y^{-3}\right)^{-2}}{\left(2x^{-1}y^{-2}\right)^{-1}}$

    (d) $\dfrac{\left(6a\right)^{-2}\left(-3abc\right)^{-1}}{c^2}$