

Section P2

$$(14) \quad a. \quad -2^{-3} \cdot (-2)^0 = \frac{-1}{2^3} = \left(\frac{-1}{8}\right)$$

$$b. \quad -2^3 \cdot (-2)^0 = (-8)$$

$$c. \quad \left(\frac{-2}{3}\right)^{-3} = \left(\frac{3}{-2}\right)^3 = \frac{3^3}{(-2)^3} = \boxed{\frac{27}{-8}}$$

$$(32) \quad a. \quad \frac{\frac{1}{2}a^{-3}b^{-4}}{2a^{-5}b^{-1}} = \frac{2^{-1}a^{-3-(-5)}}{2b^{-1-(-4)}} = \frac{a^2}{2 \cdot 2b^3} = \boxed{\frac{a^2}{4b^3}}$$

$$b. \quad \left(\frac{\cancel{x^2}y}{5\cancel{x^2}}\right)^{-2} = \left(\frac{y}{5x^2}\right)^{-2} = \left(\frac{5x^2}{y}\right)^2 = \frac{5^2(x^2)^2}{y^2} = \boxed{\frac{25x^4}{y^2}}$$

$$c. \quad \left(\frac{2y^{-1}z}{z^2}\right)^{-1} \left(\frac{y}{3z^2}\right)^2 = \frac{z^2}{2y^{-1}z} \cdot \frac{y^2}{3^2(z^2)^2} = \frac{z^2 y y^2}{2z 9z^4} = \boxed{\frac{y^3}{18z^3}}$$