Samples **Simplify SOLUTIONS**

1.

$$\begin{aligned} y^0 \div \left(y^1 y^3 y^0\right) \times x^1 x^{-1} &= y^0 \times y^{-1} y^{-3} y^0 \times x^1 x^{-1} \\ &= x^1 x^{-1} y^0 y^{-1} y^{-3} y^0 \\ &= x^{1-1} y^{0-1-3+0} \\ &= x^0 y^{-4} \\ &= y^{-4} \end{aligned}$$

2.

$$\begin{aligned} x^0 x^{-3} x^1 x^{-2} \div y^{-3} \times x^2 &= x^0 x^{-3} x^1 x^{-2} \times y^3 \times x^2 \\ &= x^0 x^{-3} x^1 x^{-2} x^2 y^3 \\ &= x^{0-3+1-2+2} y^3 \\ &= x^{-2} y^3 \end{aligned}$$

3.

$$\begin{aligned} x^{-1} \div x^3 \times y^{-2} y^{-1} x^0 y^1 &= x^{-1} \times x^{-3} \times y^{-2} y^{-1} x^0 y^1 \\ &= x^{-1} x^{-3} x^0 y^{-2} y^{-1} y^1 \\ &= x^{-1-3+0} y^{-2-1+1} \\ &= x^{-4} y^{-2} \end{aligned}$$

4.

$$\begin{aligned} y^2 \times y^2 x^1 x^{-1} x^{-2} \div y^1 &= y^2 \times y^2 x^1 x^{-1} x^{-2} \times y^{-1} \\ &= x^1 x^{-1} x^{-2} y^2 y^2 y^{-1} \\ &= x^{1-1-2} y^{2+2-1} \\ &= x^{-2} y^3 \end{aligned}$$

5.

$$\begin{aligned} y^3 y^{-3} \div \left(x^{-2} x^1 x^{-2}\right) \times y^{-3} &= y^3 y^{-3} \times x^2 x^{-1} x^2 \times y^{-3} \\ &= x^2 x^{-1} x^2 y^3 y^{-3} y^{-3} \\ &= x^{2-1+2} y^{3-3-3} \\ &= x^3 y^{-3} \end{aligned}$$