

(1)[5 points] Simplify using only positive exponents:

$$\begin{aligned} & \frac{(2x^2y^{-5})^2}{x^2} \\ &= \frac{2^2 (x^2)^2 (y^{-5})^2}{x^2} \\ &= \frac{4 x^4 y^{-10}}{x^2} \\ &= \frac{4 x^2}{y^{10}} \end{aligned}$$

(2)[5 points] Simplify:

$$\begin{aligned} & \frac{8x^3y^2 - 4x^2y - 2xy}{2xy} \\ &= \frac{\cancel{2xy} (4x^2y - 2x - 1)}{\cancel{2xy}} \\ &= 4x^2y - 2x - 1 \end{aligned}$$

(3)[5 points] Factor completely:

$$\begin{aligned} & 81(h+1)^5 - (h+1)^7 \\ &= (h+1)^5 [81 - (h+1)^2] \\ &= (h+1)^5 [9 - (h+1)] [9 + (h+1)] \\ &= (h+1)^5 (8-h)(10+h) \end{aligned}$$