

Each problem is worth 5 points. For full credit provide complete justification for your answers.

1. Simplify $2y - 3y[4 - 2(y - 1)]$.

$$\begin{aligned}
 & 2y - 3y[4 - 2y + 2] \\
 & 2y - 12y + 6y^2 - 6y \\
 & \boxed{6y^2 - 16y} \quad \text{Great}
 \end{aligned}$$

2. Factor $x^3y - 9xy^3$ completely relative to the integers.

$$\begin{aligned}
 & x^3y - 9xy^3 \quad (x-3y)(x^2+xy+3y) \\
 & xy(x^2 - 9y^2) \quad x^2 - 9y^2 + 3xy - 3xy^2 - 9y^2 \\
 & \boxed{xy(x-3y)(x+3y)} \quad \text{Nice}
 \end{aligned}$$