

$$P^{\wedge}I_{\{2, 1\}} = 16 x^2 + 2^{4-m} x^2 + 32 x y - 2^{5-m} x y - 32 y^2 + 2^{4-m} y^2 + 2^{4+m} y^2$$

$$P^{\wedge}I_{\{2, 2\}} = 2^{4-m} x^2 + 32 x y - 2^{5-m} x y - 16 y^2 + 2^{4-m} y^2$$

$$Q^{\wedge}I_{\{1, 1, 1\}} = 16 x - 2^{4-\frac{m}{2}} x + 2^{4-\frac{m}{2}} y - 2^{4+\frac{m}{2}} y$$