

Use FOIL to multiply two binomials.

FIRST: $5m^4 \cdot 9m^2 = 45m^6$

OUTER: $5m^4 \cdot (-6n^2) = -30m^4n^2$ INNER: $-6n^4 \cdot 9m^2 = -54m^2n^4$

LAST: $-6n^4 \cdot (-6n^2) = 36n^6$

Add. Combine like terms, if any: $45m^6 - 30m^4n^2 - 54m^2n^4 + 36n^6$