Multiplying Three Mon/Polynomials (F)

Simplify each expression.

1. $(-s^3 - 8s^2 + 3s)(9s^4 + s^3 - 3s^2)(-9s + 8)$

2. $(5t^3 - 7t^2 + 3t)(-t^3 - 3t^2)(3t^4 - 6t^3)$

3. $(-9n^5 + 3n^4)(7n^3 + n^2)(-3n^5 - n^4)$

4. $(7w - 7)(4w^4 + 6w^3 - 7w^2)(8w^4 - 5w^3)$

5. $(3s^2 - 2s)(5s^5 - 7s^4 + 7s^3)(8s^3 + 7s^2)$

Simplify each expression.

1. $(-s^3 - 8s^2 + 3s)(9s^4 + s^3 - 3s^2)(-9s + 8)$
   $= 81s^8 + 585s^7 - 782s^6 - 67s^5 + 297s^4 - 72s^3$

2. $(5t^3 - 7t^2 + 3t)(-t^3 - 3t^2)(3t^4 - 6t^3)$
   $= -15t^{10} + 6t^9 + 102t^8 - 135t^7 + 54t^6$

3. $(-9n^5 + 3n^4)(7n^3 + n^2)(-3n^5 - n^4)$
   $= 189n^{13} + 27n^{12} - 21n^{11} - 3n^{10}$

4. $(7w - 7)(4w^4 + 6w^3 - 7w^2)(8w^4 - 5w^3)$
   $= 224w^9 - 28w^8 - 798w^7 + 847w^6 - 245w^5$

5. $(3s^2 - 2s)(5s^5 - 7s^4 + 7s^3)(8s^3 + 7s^2)$
   $= 120s^{10} - 143s^9 + 63s^8 + 133s^7 - 98s^6$