Multiply:

1. \((x + 4)(x^2 - 4x + 2)\)  
   \[A\] \(x^3 - 14x + 8\)  
   \[B\] \(x^2 - 5x + 8\)  
   \[C\] \(x^3 - 4x^2 + 8\)  
   \[D\] \(x^3 - 16x + 8\)

2. \((x + 3)(x^2 - 2x + 2)\)
   \[A\] \(x^3 + x^2 - 4x + 6\)  
   \[B\] \(x^3 - 2x^2 + 6\)  
   \[C\] \(x^3 + x^2 - 6x + 6\)  
   \[D\] \(x^2 - 3x + 6\)

3. \((-3e^2 + e + 8)(-9e + 8)\)

4. \((-8r^2 - 9r + 9)(-5r + 1)\)

5. \((3x + 1)(5x^2 + 2x - 6)\)

6. \((5x + 2)(5x^2 - 4x - 6)\)

7. Suppose you deposit $500 in a savings account that has an interest rate \(r\) compounded annually. At the end of three years, the value of your account will be \(500(1 + r)^3\) dollars. Simplify \(500(1 + r)^3\).

8. Compare the quantities in Column A and Column B.
   
<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
</tr>
</thead>
<tbody>
<tr>
<td>the coefficient of (x) for the product ((x - 2)(x^2 + 3x + 1))</td>
<td>the coefficient of (x) for the product ((x + 2)(x^2 - 3x - 1))</td>
</tr>
</tbody>
</table>
   
   \[A\] The quantity in Column A is greater.  
   \[B\] The quantity in Column B is greater.  
   \[C\] The quantities are equal.  
   \[D\] The relationship cannot be determined from the information given.
[1] A
[2] A
[3] $27e^3 - 33e^2 - 64e + 64$
[4] $40r^3 + 37r^2 - 54r + 9$
[5] $15x^3 + 11x^2 - 16x - 6$
[6] $25x^3 - 10x^2 - 38x - 12$
[7] $500 + 1500r + 1500r^2 + 500r^3$
[8] A