Show all your work.

Simplify each expression.

1. Which of the following is a factor of :
2. Factor , using polynomial identities.
3. Multiply using polynomial identities:
4. Factor over the complex numbers.
5. What is the 3th term in the expansion of ?
6. Given , which of the following are true?
7. is a factor of .
8. os a root of
9. Solve:

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1. Expand the polynomial into standard form: