1. Consider the polynomial $x^2 + x + 1$.

    (a) Substitute $y + 1$ for x and expand the result.

    (b) Why is the polynomial in y you obtained in part (a) irreducible?

    (c) Why does the work you have done in parts (a) and (b) show that $x^2 + x + 1$ must also be irreducible?

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