PoW 27: A Certain Remainder

1. Practice
2. Work Backwards
3. Apply

1. Divide the polynomials $(x^2 + 14x + 45) \div (x + 5)$. Write your answer as a quotient plus remainder.

2. Find a quadratic polynomial $ax^2 + bx + c$ so that dividing $(ax^2 + bx + c) \div (x + 2)$ gives remainder 3.

3. Find a quadratic polynomial $ax^2 + bx + c$ so that
   - dividing $(ax^2 + bx + c) \div (x - 1)$ gives remainder 0;
   - dividing $(ax^2 + bx + c) \div (x - 3)$ gives remainder 0.

Write one or two sentences describing how you found $ax^2 + bx + c$ in Part 3.

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