Do Now: 1. If -4 is a zero of a polynomial, what is the factor?

2. Divide $\frac{3154}{11}$ using long division. Write your answer with a remainder.

Ex. 1. Divide $(5x^3 - 11x^2 - 13x + 2)$ by $(x - 3)$. 
2. \((2x - 1)\) is a factor of \((4x^3 + x - 1)\). Find the other polynomial factor.

3. If \(-2\) is a zero of \((x^3 + 5x^2 + 2x - 8)\), find all the factors of the dividend.
Long Division of Polynomials In Exercises 13–22, use long division to divide.

13. \((x^3 - 4x^2 - 17x + 6) \div (x - 3)\)
14. \((4x^3 - 7x^2 - 11x + 5) \div (4x + 5)\)
15. \((7x^3 + 3) \div (x + 2)\)
16. \((8x^4 - 5) \div (2x + 1)\)

Long Division of Polynomials In Exercises 9–12, use long division to divide and use the result to factor the dividend completely.

11. \((x^3 + 5x^2 - 12x - 36) \div (x + 2)\)
12. \((2x^3 - 3x^2 - 50x + 75) \div (2x - 3)\)