

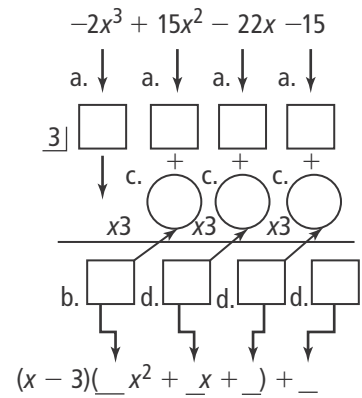


3-4 Reteach to Build Understanding

Dividing Polynomials

1. Complete the table below using synthetic division to solve for the solution to the equation. $(-2x^3 + 15x^2 - 22x - 15) \div (x - 3)$

- Begin by bringing the numbers down from the equation into the box.
- Then bring the number in the first box down to rectangle below.
- Next multiply the answer in the bottom row by three and input the product into the circle above and to the right.
- Add the product in the circle to the number in the square above it (from step a).
- Finally, bring the answers in the bottom box down into the answer.



2. Corey concluded that the remainder of $(3x^3 + 8x^2 - 4x - 3) \div (x + 2)$ is 45. What error did he make?

3. Use the Remainder Theorem to determine what the remainder of $f(x) = x^4 + 3x^3 - 6x - 8$ divided by $(x + 2)$.

Since $a = -2$, use the Remainder Theorem to find $f(-2)$:

$$f(a) = f(-2) = (\quad)^3 + 3(\quad)^2 - 6(\quad) - 8$$

$$f(-2) = \quad - 12 + 12 - 8 = \quad . \text{ The remainder is } \quad .$$