3.5 Dividing Polynomials

Math Learning Target:
"I can determine the quotient when one polynomial is divided by another polynomial."

Ex. 1: Divide 352 by 15 using long division.

Ex. 2: Divide: $3x - 2x^4 + 5$ by $x + 3$ using long division.

Word wall:
divisor
quotient
dividend
remainder

Ex. 3: When dividing by $x - k$ we can use <u>synthetic division</u>.
Divide $4x^3 - 10x^2 - 18x + 10$ by $x - 4$.

$$4 \,\bigg|\; 4 \;\; -10 \;\; -18 \;\; 10$$

Ex. 4: Using synthetic division, find the remainder
when $13x - 2x^3 + x^4 - 6$ is divided by $x + 2$.

If the remainder is zero, then

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Alternate using Long Division and Synthetic Division...

Complete pp.168–170 #5cd, 7ad, 8bc, 9ab, 10ae, 11, 12, 15
Challenge yourself! #17, 18, 19