

Topic: Polynomials**Dividing Polynomials**

4	In addition a 3.0, demonstrate in-depth inferences & applications that go beyond the learning goal.
3	<input type="checkbox"/> Solve quadratic equations in one variable by factoring <input type="checkbox"/> Determine if a given binomial is a factor of a polynomial; if so, completely factor the polynomial
2	<input type="checkbox"/> Recognize or recall specific vocabulary such as: monic, roots, end behavior <input type="checkbox"/> Factoring – showing expressions in different representations <ul style="list-style-type: none"> ▪ Non-monic ▪ Factor by grouping <input type="checkbox"/> Find the remainder using <ul style="list-style-type: none"> ▪ The Remainder Theorem ▪ Divide polynomials
1	Student performance reflects insufficient progress towards foundational skills and knowledge.

Divide. (Choose 10 problems to complete. Do the rest for more practice).

1. $(x^2 - 7x - 11) \div (x - 8)$

11. $(x^2 - 74) \div (x - 8)$

2. $(x^2 - 4x - 12) \div (x - 6)$

12. $(x^2 + 8x + 12) \div (x + 2)$

3. $(x^2 + 10x + 18) \div (x + 5)$

13. $(x^3 + 7x^2 + 14x + 3) \div (x + 2)$

4. $(x^2 - 9x - 10) \div (x + 1)$

14. $(3x^2 - 16x + 15) \div (x - 3)$

5. $(x^2 - 3x - 21) \div (x - 7)$

15. $(x^3 - 2x^2 - 14x - 5) \div (x + 3)$

6. $(2x^3 + 8x^2 - 3x - 12) \div (x + 4)$

16. $(2x^2 - 11x + 5) \div \left(x - \frac{1}{2}\right)$

7. $(x^2 + 14x + 38) \div (x + 8)$

17. $(x^3 - 4x^2 - 30x - 18) \div (x + 3)$

8. $(2x^3 - 3x^2 - 19x + 30) \div (x - 3)$

18. $(x^3 + 4x^2 - 6x - 12) \div (x - 2)$

9. $(2x^2 - 17x - 38) \div (2x + 3)$

19. $(x^3 + 5x^2 - 32x - 7) \div (x - 4)$

10. $(4x^3 - 8x^2 - 3x + 1) \div \left(x + \frac{1}{2}\right)$

20. $(x^3 - 3x^2 + 3x - 9) \div (x - 3)$

State whether the binomial $(x + 4)$ is a factor of each of the polynomials. Justify your answer. If it is a factor, factor the polynomial completely.

21. $x^3 + 5x^2 - 2x - 24$

22. $2x^3 - 4x^2 - 5x + 6$

23. $x^3 + 4x^2 - 1x - 4$