

Honors Math 3
Dividing Polynomials

Use synthetic division.

1. $(2x^2 + 3x - 35) \div (x + 5)$

2. $(3x^2 - 4x - 4) \div (x + \frac{2}{3})$

3. $(x^3 - x^2 - 17x + 12) \div (4 + x)$

4. $(3x^3 - 2x^2 + 1) \div (x - 2)$

5. $(x^3 - 5x^2 + 4x + 7) \div (x - 1)$

6. $(2x^3 - 53x + 6) \div (x - 5)$

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

8. $(3x^4 - 8x^3 - 5x^2 + 7x - 1) \div (x - 3)$

9. $(4y^4 - 5y^2 - 8y + 3) \div (2y - 3)$

10. $(2x^4 - 3x^3 - x + 2) \div (2x + 1)$

Find the remainder when the polynomial is divided by the binomial (use the remainder theorem).

11. $x^2 - 1; x - 2$

12. $x^2 - x + 4; x - 2$

13. $x^2 - x + 6; x + 3$

14. $x^2 + 10x + 24; x + 6$

15. $3x^2 + 2x - 9; x - 1$

16. $5x^2 - 6x + 2; x - 2$

17. $-5x^2 - 11x + 3; 1 - x$

18. $2x^2 - x + 1; x - \frac{1}{2}$

19. $3x^2 - 8x + 4; x - \frac{2}{3}$

20. $x^3 + 9x^2 - 5; x + 1$

21. $x^3 + 2x^2 - 5x - 6; x + 2$

22. $-4x^3 + 11x^2 - 9x + 8; 1 - x$

23. $3x^3 - x^2 + x; x - \frac{1}{2}$

24. $x^4 - x^3 + x; x + 2$

25. $x^4 - 5x^3 + 2x^2 - 7x + 2; x - 2$

26. $4x^4 + 7x^3 - 2x^2 + x - 9; x + 3$

27. $x^4 - x^3 + 3; x - \frac{1}{2}$

28. $3x^4 + 6x^3 - 5x + 1; x + \frac{2}{3}$