

Taken from § 5.6 in the text.

1. When factoring a polynomial, what is a good first step?
3. Can you factor $x^2 + 4$? Explain.

In exercises 5 - 17 odd, factor completely, if possible.

5. $a^2 - a$

7. $a^2 - 9$

9. $x^2 - 2x + 1$

11. $x^3 - a^3$

13. $a^2 + 4$

15. $x(x + 2) - 3(x + 2)$

17. $x^3 + 2x^2 + x + 2$

19. $6x^2 - 14x$

21. $2x^3 - 18x$

23. $4a^4 - 64$

25. $6x^3 - 13x^2 - 15x$

27. $2x^4 - 5x^3 - 25x^2$

29. $2x^4 + 5x^2 + 3$

31. $x^3 + 3x^2 + x + 3$

33. $5x^3 - 5x^2 + 10x - 40$

35. $ax + bx - ay - by$

37. $18x^2 + 12x + 2$

39. $-4x^3 + 24x^2 - 36x$

41. $8x^3 - 27$

43. $-x^4 - 8x$

$$45. x^4 - 2x^3 - x + 2$$

$$47. r^4 - 16$$

$$49. 25x^2 - 4a^2$$

$$51. 2x^4 - 2y^4$$

$$53. 9x^3 + 6x^2 - 3x$$

$$55. (z - 2)^2 - 9$$

57. $3x^5 - 27x^3 + 3x^2 - 27$

Noah prob: Suppose $f(x) = 4x^2 + 8x - 5$.

a) Determine $f(3)$

b) Rewrite $f(x)$ in factored form.

c) Determine $f(3)$ again using the factored form you found in part (b).

d) Supposing you got the same answer in parts (a) and (c), does necessarily imply that you factored $f(x)$ correctly?