

Factoring Practice

Completely factor the following.

1. $2 - 8x^2$

$$2(1 - 4x^2) = 2(1+2x)(1-2x)$$

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

$$(x+4)(x+1)$$

3. $4x^2 - 8x + 32 = 4(x^2 - 2x + 8)$

~~$$4(x+4)(x-2)$$~~

4. $x^2 + 12x + 60$

Prime

5. $3x^2 - 12x - 36$

$$3(x-6)(x+2)$$

6. $3y^3 - 18y^2 - 48y$

$$3y(y-8)(y+2)$$

7. $6x^2 + 8x + 2$

$$2(x+1)(3x+1)$$

8. $x^4 - 1$

$$(x^2+1)(x+1)(x-1)$$

9. $x^7 - x^5$

$$x^5(x+1)(x-1)$$

10. $9x^2 - 24x + 16$

$$(3x-4)^2$$

11. $4x^2 - 16x + 15$

$$(2x-5)(2x-3)$$

12. $4 - 14x^2 - 8x^4$

$$-2(x^2+2)(2x+1)(2x-1)$$

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

$$(x+1)(x-1)(x-2)$$

14. $x^3 - 3x^2 - x + 3$

$$(x+1)(x-1)(x-3)$$

15. $x^4 - x^3 + x - 1$

$$(x+1)(x^2-x+1)(x-1)$$

16. $x^4 + x^3 + x + 1$

$$(x+1)(x^2-x+1)(x+1)$$

$$17. x^3 - 1$$

$$(x-1)(x^2+x+1)$$

$$18. x^3 + 8$$

$$(x+2)(x^2-2x+4)$$

$$19. 64x^3 - 27$$

$$(4x-3)(16x^2+12x+9)$$

$$20. 125 + 8x^3$$

$$(5+2x)(25-10x+4x^2)$$

$$21. 6x^3 + 15x^2 - 9x$$

$$3x(x+3)(2x-1)$$

$$22. 50x - 8x^3$$

$$2x(5-2x)(5+2x)$$