

Simplify the following expressions

1. $(x+3)(x+5)$

$x^2 + 8x + 15$

2. $(x-8)(x+4)$

$x^2 - 4x - 32$

3. $(x-7)^2$

$x^2 - 14x + 49$

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

$x^2 - 4$

Factor using the Greatest Common Factor (GCF)

5. $3x^2 + 5x$

$x(3x+5)$

6. $12x^3 + 18x$

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

7. $18x^2 + 27y^2$

$9(2x^2+3y^2)$

8. $32a^2 - 12ab$

$4a(8a-3b)$

9. $3n^3 - 18n^2 + 15n$

$3n(n^2-6n+5)$

10. $32r^4 - 40r^3 + 56r^2$

$8r^2(4r^2-5r+7)$

11. $4k^5 + 10k^4 - 8k^3$

$2k^3(2k^2+5k-4)$

12. $-10g^3 + 50g^2$

$-10g^2(g+5)$

13. $9v^2 + 24v - 15$

$3(3v^2+8v-5)$

14. $6d^3 - 24$

$6(d^3-4)$

15. $12x^3 - 18x^2y + 2xy^2$

$2x(6x^2-9xy+y^2)$

16. $9m^2n^2 + 9m^3n - 45m^5$

$9m^2(n^2+mn-5m^3)$

17. $21n^2 + 4n$

$n(21n+4)$

18. $-14x^3 + 5x^2$

$-x^2(14x-5)$

19. $42x^2 + 63xy + 70y^2$

$7(6x^2+9xy+10y^2)$

Name: Key

Factor completely

20. $x^2 + 12x + 11$

$$(x+1)(x+11)$$

21. $x^2 + 11x + 28$

$$(x+7)(x+4)$$

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

$$(x-5)(x-1)$$

23. $x^2 - 9x + 18$

$$(x-6)(x-3)$$

24. $x^2 + 3x - 10$

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

25. $x^2 + x - 20$

$$(x+5)(x-4)$$

26. $x^2 - 11x + 18$

$$(x-9)(x-2)$$

27. $x^2 - 4x - 21$

$$(x-7)(x+3)$$

28. $x^2 + 10x + 9$

$$(x+9)(x+1)$$

29. $x^2 + 0x - 81$

$$(x-9)(x+9)$$

30. $x^2 + 0x - 144$

$$(x-12)(x+12)$$

31. $x^2 - 7x + 12$

$$(x-3)(x-4)$$

32. $x^2 - 6x - 27$

$$(x-9)(x+3)$$

33. $x^2 + 11x + 18$

$$(x+9)(x+2)$$

34. $x^2 + 15x + 36$

$$(x+9)(x+4)$$