fractions II

01 1. $(2x+3y)(x+5y)$

$2x^2 + 10xy + 3xy + 15y^2$

$2x^2 + 13xy + 15y^2$ //

2. $(3a-5b)(2a-b)$

$6a^2 - 3ab - 10ab + 5b^2$

$6a^2 - 13ab + 5b^2$ //

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

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

$9x^2 + 6x + 6x + 4$

$9x^2 + 12x + 4$

4. $(2y-5)^2$

$(2y-5)(2y-5)$

$4y^2 - 10y - 10y + 25$

$4y^2 - 20y + 25$

5. $(2p^2+3pq)(q^2-2pq)$

$2p^2q^2 - 4p^3q + 3pq^3 - 6p^2q^2$

$+3pq^3 - 4p^3q^2 - 4p^2q^2$ //

~~$q^2(3pq - 4p^3$~~

$pq^3(3q - 4p^2 - 4p)$

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

$x^2 + 3x + 2x + 6$

$x^2 + 5x + 6$ //

7. $(a+3)(a-4)$

$a^2 - 4a + 3a - 12$

$a^2 - a - 12$ //

8. $(3x+4y)(3x-4y)$

~~$9x^2 + 12xy + 12xy$~~ $+ 16y^2$

$(9x^2 + 16y^2)$

9. $(ap^2+3pq)(5p+3q)$

$5ap^3 + 3ap^2q + 15p^2q + 9pq^2$

~~pq~~ (

$p(5ap^2 + 3apq + 15pq + 9q^2)$ //

10. $(2ab-b^2)(a^2-3ab)$

$2a^3b - 6a^2b^2 - a^2b^2 + 3ab^3$

$ab(2a^2 - 6ab - ab + 3b^2)$ //

11. $(a+b)(a^2-ab+b^2)$

$a^3 - a^2b + ab^2 + a^2b - ab^2 + b^3$

$a^3 - a^2b + ab^2 + a^2b - ab^2 + b^3$

$a^3 - a^2b + a^2b + b^3$ //

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12. $(a-b)(a^2+ab+b^2)$

$a^3+a^2b+ab^2-a^2b-ab^2-b^3$

$a^3+a^2b+ab^2-a^2b-ab^2-b^3$

$a^3+a^2b-a^2b-b^3$ //

02

1. $5a+10b$

$5(a+2b)$ //

2. $5xy+8xz$

$x(5y+8z)$

3. $3a^2+2ab$

$a(3a+2b)$

4. $3a^2-6ab$

$3a(a-2b)$

5. $5xy-10xz$

$5x(y-2z)$

6. a^2b+3ab^2

$ab(a+3b)$

7. $4pq^2-6p^2q$

$2pq(2q-3p)$

8. $3x^2y^3+5x^3y^2$

$x^2y^2(3y+5x)$

9. $x^2+9x+14$

7×2

$x^2+7x+2x+14$

$(x+7)(x+2)$

10. $y^2+8y+12$

6×2

$y^2+6y+2y+12$

$(y+6)(y+2)$

11. $x^2+8x+16$

4×4

$x^2+4x+4x+16$

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

12. $p^2+13p+22$

11×2

$p^2+11p+2p+22$

$(p+11)(p+2)$

13. $2x^2+7x+3$

6×1, 6

$2x^2+6x+x+3$

~~$3x+6$~~ $2x(x+3)+1(x+3)$

~~$2x(x+3)+3$~~

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

14. $3a^2+a-15$

$\times 3$, $\times 5$

$a(3a+1)-15$

15. $3b^2+10b+7$

7×3, 1×21

$3b^2+7b+3b+7$

$3b(b+1)+7(b+1)$

$(3b+7)(b+1)$ //

16. $5x^2+8x+3$

5×3, 1×15

$5x^2+5x+3x+3$

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

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

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17. x^2+x-2

$2 \quad -1$

$x^2+2x-x-2$

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

$(x+2)(x+1)$ //

18. $2a^2+a-15$

$6 \quad 5 \quad -30$

$2a^2+6a-5a-15$

$2a(a+3)-5(a+3)$

$(2a-5)(a+3)$ //

19. $2x^2+5x-12$

$8 \quad -3 \quad 24$

$2x^2+8x-3x-12$

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

$(2x-3)(x+4)$ //

20. p^2-q^2

$(p+q)(p-q)$

22. $4x^2-81y^2$

$(2x+9y)(2x-9y)$

~~23. $6x^2-1$~~

21. $6y^2-19y+10$

$-19 \quad -4 \quad 60$

$6y^2-15y-4y+10$

$3y(2y-5)-2(2y-5)$

$(3y-2)(2y-5)$ //

24. $4x^2-12x+9$

$-6 \quad -6 \quad 36$

$4x^2-6x-6x+9$

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

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

29. y^2+6y+9

$y^2+3y+3y+9$

$y(y+3)+3(y+3)$

$(y+3)(y+3)$ //

25. x^2+8x+7

8

$x^2+7x+x+7$

$x(x+1)+7(x+1)$

$(x+1)(x+7)$ //

26. p^2+6p+5

$5 \quad 1$

$p^2+5p+p+5$

$p(p+1)+5(p+1)$

$(p+5)(p+1)$ //

~~30. x^2+6x+8~~

~~$6 \quad 2$~~

~~$x^2+6x+2x+8$~~

~~$x(x+2)$~~

27. x^2+7x+6

$6 \quad 1$

$x^2+6x+x+6$

$x(x+1)+6(x+1)$

$(x+6)(x+1)$ //

28. x^2+5x+6

$3 \quad 2$

$x^2+3x+2x+6$

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

$(x+3)(x+2)$ //

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30. x^2+6x+8 (6, 2)

$x^2+4x+2x+8$

$x(x+2)+4(x+2)$

$(x+2)(x+4)$

31. $a^2+7a+10$ (5, 2)

$a^2+2a+5a+10$

$a(a+2)+5(a+2)$

$(a+5)(a+2)$

32. $x^2+9x+20$ (5, 4)

$x^2+5x+4x+20$

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

$(x+4)(x+5)$ //

33. $x^2+13x+36$ (9, 4)

$x^2+9x+4x+36$

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

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

34. $3x^2+8x+5$ (15; 5, 3)

$3x^2+3x+5x+5$

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

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

35. $2y^2+15y+7$ (14×1; 14)

$2y^2+y+14y+7$

$y(2y+1)+7(2y+1)$

$(y+7)(2y+1)$ //

36. $3a^2+11a+6$ (18; 9, 2)

$3a^2+2a+9a+6$

$3a(a+3)+2(a+3)$

$(3a+2)(a+3)$

37. $3x^2+19x+6$ (18; 18, 1)

$3x^2+18x+x+6$

$3x(x+6)+1(x+6)$

$(3x+1)(x+6)$ //

38. $5p^2+23p+12$ (60; 20, 3)

$5p^2+20p+3p+12$

$5p(p+4)+3(p+4)$

$(5p+3)(p+4)$ //

39. $5x^2+16x+12$ (60; 10, 6)

$5x^2+10x+6x+12$

$5x(x+2)+6(x+2)$

$(5x+6)(x+2)$ //

40. $x^2-11x+24$ (-8, -3)

$x^2-3x-8x+24$

$x(x-3)-8(x-3)$

$(x-3)(x-8)$ //

41. $y^2-9y+18$ (-6, -3)

$y^2-6y-3y+18$

$y(y-6)-3(y-6)$

$(y-6)(y-3)$ //

42. $x^2-11x+18$ (-9, -2)

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

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

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

43. $p^2+5p-24$ (8, -3)

$p^2-3p+8p-24$

$p(p-3)+8(p-3)$

$(p+8)(p-3)$

44. $x^2+4x-12$ (6, -2)

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

$x^2-2x+6x-12$

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

45. $2q^2-5q-3$ (6, -1; 6)

$2q^2+6q-q-3$

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

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

46. $3x^2-10x-8$ (-24; -12, +2)

$3x^2-12x+2x-8$

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

$(3x+2)(x-4)$ //

~~47. $3x^2-10x-8$ (-24)~~

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47. $2a^2 - 3a - 5$

$-5 \times +2 = -10$

$2a^2 + 2a - 5a - 5$

$2a(a+1) - 5(a+1)$

$(2a-5)(a+1)$

48. $2x^2 - 5x - 12$

$-8 \times +3 = -24$

$2x^2 + 3x - 8x - 12$

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

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

49. $3b^2 - 20b + 12$

$-18 \times -2 = 36$

$3b^2 - 18b - 2b + 12$

$3b(b-6) - 2(b-6)$

$(3b-2)(b-6)$

50. $9x^2 - 25y^2$

$9x +$

$(3x+5y)(3x-5y)$

Si $16x^4 - 81y^4$

$((4x-9y)(4x-9y))^2$

$(4x^2 - 9y^2)(4x^2 - 9y^2)$