

Multiply the following polynomial. Make sure your final answers are completely simplified.

21. $(x + 2)(x^2 + 5x + 6)$

22. $(y + 3)(y^2 - 6y + 1)$

23. $(x + 3)(x^2 + 7x + 11)$

24. $(y + 5)(y^2 - 7y - 10)$

25. $(2x + 1)(x^2 - 6x + 2)$

26. $(3y + 3)(4y^2 + 5y + 20)$

27. $(3x + 5)(5x^2 + 4x + 11)$

28. $(2y + 7)(8y^2 - 6y + 1)$

29. $(x^2 - 2x + 1)(x^2 + 5x + 6)$

30. $(x^2 - 6x + 2)(x^2 + 3x + 2)$

Answers:

21. $x^3 + 5x^2 + 6x + 2x^2 + 10x + 12 = x^3 + 7x^2 + 16x + 12$

22. $y^3 - 6y^2 + y + 3y^2 - 18y + 3 = y^3 - 3y^2 - 17y + 3$

23. $x^3 + 7x^2 + 11x + 3x^2 + 21x + 33 = x^3 + 10x^2 + 32x + 33$

24. $y^3 - 7y^2 - 10y + 5y^2 - 35y - 50 = y^3 - 2y^2 - 45y - 50$

25. $2x^3 - 12x^2 + 4x + x^2 - 6x + 2 = 2x^3 - 11x^2 - 2x + 2$

26. $12y^3 + 15y^2 + 60y + 12y^2 + 15y + 60 = 12y^3 + 27y^2 + 75y + 60$

27. $15x^3 + 12x^2 + 33x + 25x^2 + 20x + 55 = 15x^3 + 37x^2 + 53x + 55$

28. $16y^3 - 12y^2 + 2y + 56y^2 - 42y + 7 = 16y^3 + 44y^2 - 40y + 7$

29. $x^4 + 3x^2 - 3x^2 - 7x + 6$

30. $x^4 - 3x^3 - 14x^2 - 6x + 4$