

The Weekly Rigor

No. 307

“A mathematician is a machine for turning coffee into theorems.”

May 9, 2020

20 Problems in Multiplying a Polynomial by a Polynomial (Part 2)

11. $(a - b - c)(a - b - c)$.

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

13. $(2a - 3b)(a - b)$.

14. $(3a - 2b)(2a - 3b)$.

15. $(a^2 - b^2)(a^2 + b^2)$.

16. $(3x - 6y)(2x + 4y)$.

17. $(c^2 + cd + d^2)(c - d)$.

18. $(a^m + b^n)(a^m - b^n)$.

19. $(y - 3)(y + 9)$.

20. $(x - 1)(x + 4)(x - 6)$.

ANSWERS

1. $ac + ad + bc + bd$	2. $ac - ad - bc + bd$
3. $a^2 + 2ab + b^2$	4. $a^2 - 2ab + b^2$
5. $a^2 - b^2$	6. $a^3 + 3a^2b + 2ab^2 + b^3$
7. $a^3 - 3a^2b + 2ab^2 - b^3$	8. $a^3 - a^2b - ab^2 + b^3$
9. $a^3 + a^2b - ab^2 - b^3$	10. $a^2 + b^2 + c^2 + 2ab + 2ac + 2bc$
11. $a^2 + b^2 + c^2 - 2ab - 2ac + 2bc$	12. $2a^2 + 3ab - 2b^2$
13. $2a^2 - 5ab + 3b^2$	14. $6a^2 - 13ab + 6b^2$
15. $a^4 - b^4$	16. $6x^2 - 24y^2$
17. $c^3 - d^3$	18. $a^{2m} - b^{2n}$
19. $y^2 + 6y - 27$	20. $x^3 - 3x^2 - 22x + 24$

“Only he who never plays, never loses.”