

# The Weekly Rigor

No. 196

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

March 24, 2018

## 39 Problems in Factoring by the Difference of Squares

(Part 1)

### PROBLEMS

For each of the following expressions, factor by the method “difference of squares.”

1.  $x^2 - 3^2$

2.  $x^2 - 4^2$

3.  $x^2 - 1^2$

4.  $x^2 - 25$

5.  $x^2 - 36$

6.  $x^2 - 144$

7.  $49 - x^2$

8.  $1 - x^2$

9.  $81 - x^2$

10.  $4x^2 - 9$

11.  $16x^2 - 1$

12.  $49x^2 - 25$

13.  $25 - 4x^2$

14.  $36 - 9x^2$

15.  $1 - 16x^2$

16.  $9x^2 - y^2$

17.  $64x^2 - y^2$

18.  $121x^2 - y^2$

19.  $x^2 - 4y^2$

20.  $x^2 - 36y^2$

21.  $x^2 - 121y^2$

22.  $9x^2 - 16y^2$

23.  $49x^2 - 25y^2$

24.  $81x^2 - 64y^2$

25.  $(x + y)^2 - 4$

26.  $(x - y)^2 - 81$

27.  $9 - (x + y)^2$

28.  $64 - (x - y)^2$

29.  $4(x + y)^2 - 16$

30.  $81(x - y)^2 - 1$

31.  $(x + 3)^2 - (x + 5)^2$

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

33.  $x^4 - y^4$

34.  $9x^4 - 16y^4$

35.  $25x^4 - 81y^4$

36.  $x^2 - 5$

37.  $x^2 - 10$

38.  $2x^2 - 50$

39.  $27x^2 - 48y^2$

“Only he who never plays, never loses.”