

MENTAL MATH MASTERY: SQUARING NUMBERS

Grade 7 Practice Worksheet • Fast Calculation Tricks & Drills (No Answers Included)

Name:

Date:

Time Taken:

Score: / 72

Instructions: Solve these problems using mental math shortcuts (Vedic math / base methods / algebraic expansion). Do not use long-form vertical multiplication or a calculator. Write down only the final squared value in the blank provided!

Set 1: Numbers Ending in 5

Trick: Multiply leading part by (N + 1), then append 25

1. $35^2 =$ _____

2. $65^2 =$ _____

3. $85^2 =$ _____

4. $95^2 =$ _____

5. $105^2 =$ _____

6. $115^2 =$ _____

7. $145^2 =$ _____

8. $195^2 =$ _____

Set 2: Two-Digit Numbers Near Base 50

Trick: $(50 \pm d)^2 \rightarrow$ Left: $(25 \pm d)$, Right: d^2 (2 digits)

9. $52^2 =$ _____

10. $56^2 =$ _____

11. $48^2 =$ _____

12. $44^2 =$ _____

13. $59^2 =$ _____

14. $41^2 =$ _____

15. $62^2 =$ _____

16. $38^2 =$ _____

Set 3: Numbers Near Base 100 (90 to 110)

Trick: $(100 \pm d)^2 \rightarrow$ Left: $(\text{Number} \pm d)$, Right: d^2 (2 digits)

17. $104^2 =$ _____

18. $107^2 =$ _____

19. $96^2 =$ _____

20. $93^2 =$ _____

21. $109^2 =$ _____

22. $88^2 =$ _____

23. $112^2 =$ _____

24. $89^2 =$ _____

Set 4: General 2-Digit Numbers (Duplex / Identity Method)

Trick: $(ab)^2 \rightarrow a^2 \mid 2ab \mid b^2$ with carrying

25. $23^2 =$ _____

26. $32^2 =$ _____

27. $43^2 =$ _____

28. $67^2 =$ _____

29. $71^2 =$ _____

30. $84^2 =$ _____

31. $76^2 =$ _____

32. $92^2 =$ _____

Set 5: 3-Digit Numbers with 0 in the Tens Place ($a0b$)²

Trick: $(a0b)^2 \rightarrow a^2 \mid 2ab$ (2 digits) $\mid b^2$ (2 digits)

33. $203^2 =$ _____

34. $304^2 =$ _____

35. $406^2 =$ _____

36. $508^2 =$ _____

37. $607^2 =$ _____

38. $709^2 =$ _____

39. $802^2 =$ _____

40. $905^2 =$ _____

Set 6: 3-Digit Numbers Near Base 200, 300, 500 & 1000 *Trick: Multiply base difference adjustment by multiplier factor!*

41. $206^2 =$ _____

42. $198^2 =$ _____

43. $305^2 =$ _____

44. $297^2 =$ _____

45. $498^2 =$ _____

46. $504^2 =$ _____

47. $994^2 =$ _____

48. $988^2 =$ _____

Set 7: General 3-Digit Squaring (Grouping Method [AB|C] or [A|BC])

Trick: Group into two blocks (e.g. 21|3) and apply 2-digit formula

49. $121^2 =$ _____

50. $113^2 =$ _____

51. $212^2 =$ _____

52. $312^2 =$ _____

53. $415^2 =$ _____

54. $511^2 =$ _____

55. $612^2 =$ _____

56. $715^2 =$ _____

57. $820^2 =$ _____

★ **Set 8: Lightning Speed Drill (Mixed 2-Digit & 3-Digit Squaring Challenge)** ★

58. $45^2 =$ _____

59. $57^2 =$ _____

60. $99^2 =$ _____

61. $106^2 =$ _____

62. $208^2 =$ _____

63. $495^2 =$ _____

64. $997^2 =$ _____

65. $83^2 =$ _____

66. $125^2 =$ _____

67. $309^2 =$ _____

68. $91^2 =$ _____

69. $103^2 =$ _____

70. $403^2 =$ _____

71. $991^2 =$ _____

72. $615^2 =$ _____

Bonus $999^2 =$ _____