

Squaring Two-Digit Numbers Mentally

Example 76^2

Method 1 – Think $(70 + 6)(70 + 6)$

$$70 \times 70 = 4900$$

$$\text{twice } 70 \times 6 = 840$$

$$4900 + 840 = 5000 + 740 = 5740$$

$$\text{plus } 6 \times 6 = 5776.$$

Method 2 – Think $(75 + 1)(75 + 1)$

$$75 \times 75 = 5625 \text{ (using the neat rule for squaring numbers ending in 5)}$$

Add twice 75

$$5625 + 150 = 5775$$

$$\text{Plus } 1 = 5776$$

Method 3 – Weird method, but it works

say 7-6-13 (the sum)

49-36-169 (the squares)

84 (the last square minus the first two)

$$4936 + 840 = 5776.$$

Method 4 – Vedic Arithmetic

$$7 \quad 6$$

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6 x 6 is 36, write 6 remember 3

7 x 6 is 42, plus 7 x 6 is 84, plus 3 to get 87, write 7 remember 8

7 x 7 is 49, plus 8 is 57, write it

Answer: 5776