SQUARE (वर्ग)

SQUARE ROOT
(वर्गमूल)

CLASS NOTES

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$(24)^2 =$

$(546)^2 =$

$(614)^2 =$

$(1235)^2 =$

$(1284)^2 =$

For calculating squares of any number very fast, you should know the squares from 1 to 30.

Square 1 to 30

$1^2 = 1$	$11^2 = 121$	$21^2 = 441$
$2^2 = 4$	$12^2 = 144$	$22^2 = 484$
$3^2 = 9$	$13^2 = 169$	$23^2 = 529$
$4^2 = 16$	$14^2 = 196$	$24^2 = 576$
$5^2 = 25$	$15^2 = 225$	$25^2 = 625$
$6^2 = 36$	$16^2 = 256$	$26^2 = 676$
$7^2 = 49$	$17^2 = 289$	$27^2 = 729$
$8^2 = 64$	$18^2 = 324$	$28^2 = 784$
$9^2 = 81$	$19^2 = 361$	$29^2 = 841$
$10^2 = 100$	$20^2 = 400$	$30^2 = 900$

end with 5

$(25)^2 = 625$

$(35)^2 = 1225$

$(45)^2 = 2025$

$(35)^2 =$

$(45)^2 =$

$(115)^2 =$

How to calculate square of numbers that ends on 5.

$$(10x + 5)^2 = 100x^2 + 100x + 25$$
$$= 100x(x+1) + 25$$
$$= x(x+1) / 25$$

$(65)^2 =$ 4225

$(75)^2 =$ 5625

$(95)^2 =$ 9025

$(35)^2 =$ 1225

✓ $(45)^2 =$ 2025

✓ $(85)^2 =$ 7225

8x9

$$(X5)^2 = x(x+1) / 25$$

This can be understood as

$$(X5)^2 = (x^2+x) / 25$$

$(105)^2 = 11025$

$(115)^2 =$

$(105)^2 =$

$(125)^2 =$

$(145)^2 =$

$(105)^2 = 11025$

$(115)^2 = 13225$

$(235)^2 = 55225$

23×24

$= 23^2 + 23$

$= 529 + 23$

$= 552$

$(195)^2 = 38025$ / $380\,25$

$(165)^2 = 27225$

$(205)^2 = 42025$

$(225)^2 =$ 50625

22^2+22

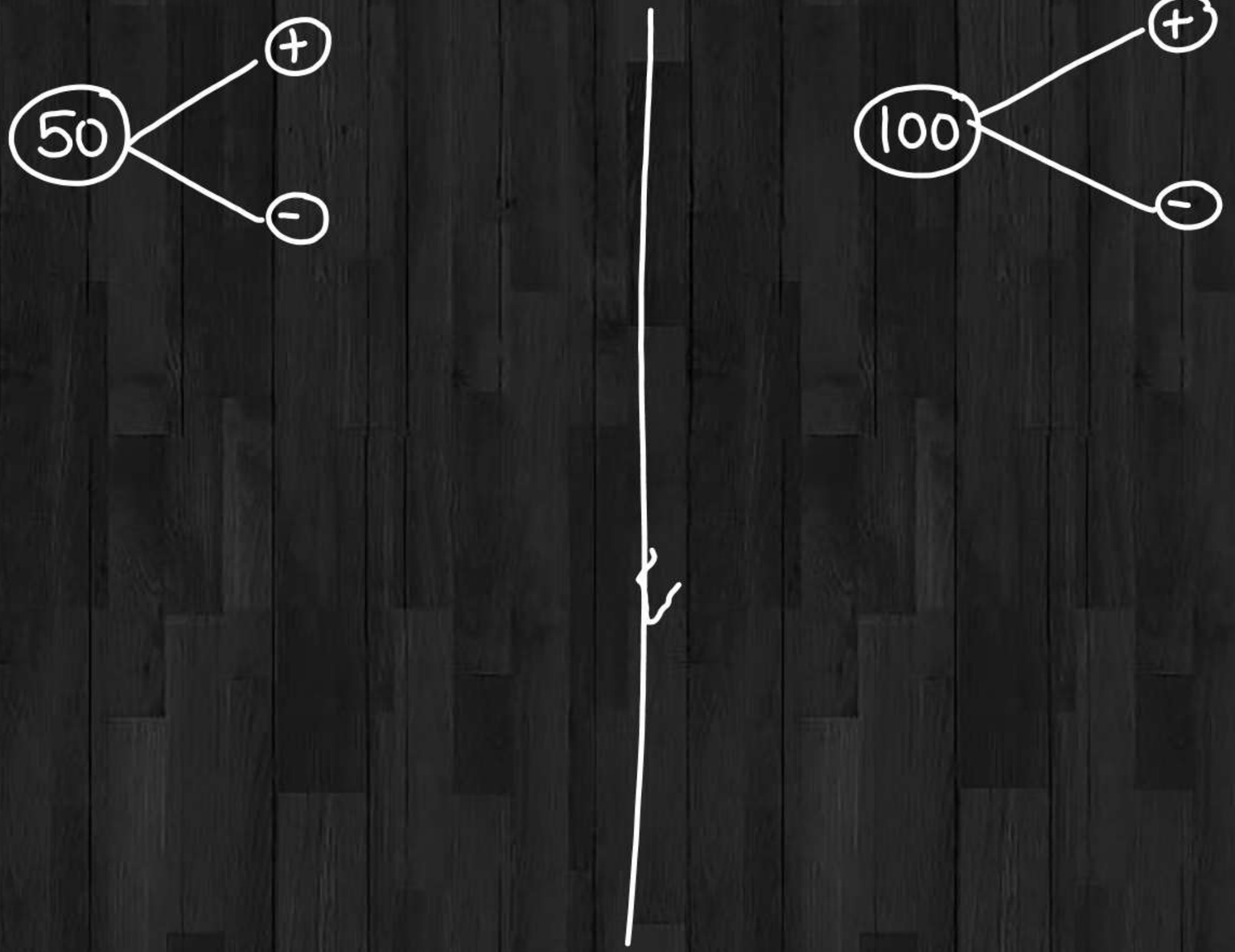
$(285)^2 =$ 81225

✓ $(455)^2 =$ 207025

45^2+45

$= 2025$

Base Method



50 ⊕

$(51)^2 = 2601$

$(52)^2 = 2704$ ✓

$(53)^2 = 2809$

$(54)^2 = 2916$

$(57)^2 = 3249$

50 −

$(49)^2 = 2401$ ✓

$(48)^2 = 2304$

$(47)^2 = 2209$

$(46)^2 = 2116$ ✓

$(44)^2 = 1936$ ✓

100 ⊕

$(101)^2 = 10201$

$(102)^2 = 10404$

$(103)^2 = 10609$

$(104)^2 = 10816$

$(107)^2 = 11449$

$(108)^2 = 11664$

100 ⊖

$(99)^2 = 9801$

$(98)^2 = 9604$

$(97)^2 = 9409$

$(96)^2 = 9216$

$(95)^2 = 9025$

$(93)^2 = 8649$

$(10-99)^2$ $(100-999)^2$ $(1000-9999)^2$

Application of Base method in calculating squares from 31 to 130.

Case I : 101 - 130

Here, Base = 100

Let N = 100 + x

Then $N^2 = (N+x) / x^2$

Note: Here, x^2 is to be written in 2 digits.

$(108)^2 = 11664$

$(103)^2 = 10609$

$(109)^2 = 11881$

$(112)^2$ = 12 / 144

= 12544 ✓

$(116)^2$ = 132 / 256

= 13456

✓ $(123)^2$ = 146 / 529

= 15129

Case II : 71 - 100

Here, Base = 100

Let N = 100 - x

Then $N^2 = (N - x) / x^2$

Note: Here, x^2 is to be written in 2 digits.

$(57)^2 =$ 3249

$(42)^2 =$ 1764

$(59)^2 =$ 3481

$(94)^2$ =

$(97)^2$ =

$(91)^2$ =

$(89)^2 =$

$(84)^2 =$

$(78)^2 =$

Case III : 31 - 70

Here, Base = 50

Let N = $50 \pm x$

Then $N^2 = (25 \pm x) / x^2$

Note: Here, x^2 is to be written in 2 digits.

$(63)^2 = 38/169$

$= 3969$ ✓

$(67)^2 = 42/289$

$= 4489$ ✓

$(68)^2 = 43/324$

$= 4624$

MIXED PRACTICE.

$(54)^2$ =

$(118)^2$ =

$(87)^2$ =

$(39)^2$ =

$(63)^2$ =

$(124)^2$ =

MIXED PRACTICE.

$(42)^2 =$ 1764

$(93)^2 =$ 8649

$(103)^2 =$ 10609

$(64)^2 =$ 39 / 196

$=$ 40 96

$(56)^2 =$ 3136

$(126)^2 =$ 152 / 676

15876