FINDING SQUARES OF NUMBERS NEARER TO 100

$$X^2 = X^2 + Y^2 - Y^2$$
$$X^2 = X^2 - Y^2 + Y^2$$
$$X^2 = (X^2 - Y^2) + Y^2$$
$$X^2 = (X + Y)(X - Y) + Y^2$$

Here 'Y' is any number. We have to take 'Y' value such that $(X + Y)$ or $(X - Y)$ is 100.

Example: Let we find the value of 98^2.

Here we have to take $Y = 2$ (Because 98 is 2 less than 100)

$98^2 = (98 + 2)(98 - 2) + 2^2$
$= 100 \times 96 + 4$
$= 9600 + 4$
$= 9604$

We can imagine /calculate the solution in our memory as follows
Add 2 to 98 gives 100. And subtract 2 from 98 gives 96.
The product of these two numbers is 9600.

Add 2^2 means 4 then we get 9604.

Example: Let we find the value of 96^2.

Here we have to take $Y = 4$ (Because 96 is 4 less than 100)

$96^2 = (96 + 4)(96 - 4) + 4^2$
$= 100 \times 92 + 16$
$= 9216$

Imagine /calculate the solution in our memory as follows
Add 4 to 96 gives 100. And subtract 4 from 96 gives 92.
The product of these two numbers is 9200.

Add 4^2 means 16 then we get 9216.

Example: Let we find the value of 97^2.

Add 3 to 97 gives 100. And subtract 3 from 97 gives 94.
The product of these two numbers is 9400.

Add 3^2 means 9 then we get 9409.

Example: $99^2 = 9800 + 1 = 9801$

$93^2 = 8600 + 49 = 8649$
$92^2 = 8464$

Example: Let we find the value of 104^2.

Here $Y = 4$ (Because 104 is 4 more than 100)

$104^2 = 108 \times 100 + 16 = 10816$

Example: $102^2 = 10404$

$103^2 = 10609$
$106^2 = 11236$
$109^2 = 11881$

Do these: $101^2 = ………………$ $107^2 = ………………$ $108^2 = …………………$

$99^2 = ………………$ $91^2 = ………………$ $94^2 = …………………$

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