Squares and Square Roots Ex 3.2 Q4

Answer :

The units digit is affected only by the last digit of the number. Hence, for each question, we only need to examine the square of its last digit.
(i) Its last digit is 2. Hence, the units digit is 2^2, which is equal to 4.
(ii) Its last digit is 7. Hence, the units digit is the last digit of 49 ($49 = 7^2$), which is 9.
(iii) Its last digit is 3. Hence, the units digit is 3^2, which is equal to 9.
(iv) Its last digit is 7. Hence, the units digit is the last digit of 49 ($49 = 7^2$), which is 9.
(v) Its last digit is 8. Hence, the units digit is the last digit of 64 ($64 = 8^2$), which is 4.
(vi) Its last digit is 0. Hence, the units digit is 0^2, which is equal to 0.
(vii) Its last digit is 6. Hence, the units digit is the last digit of 36 ($36 = 6^2$), which is 6.
(viii) Its last digit is 5. Hence, the units digit is the last digit of 25 ($25 = 5^2$), which is 5.
(ix) Its last digit is 4. Hence, the units digit is the last digit of 16 ($16 = 4^2$), which is 6.

Squares and Square Roots Ex 3.2 Q5

Answer :

From the pattern, we can say that the sum of the first *n* positive odd numbers is equal to the square of the *n*-th positive number. Putting that into formula:
$1 + 3 + 5 + 7 + \ldots\ n = n^2$, where the left hand side consists of *n* terms.

Squares and Square Roots Ex 3.2 Q6

Answer :

From the pattern, we can say that the difference between the squares of two consecutive numbers is the sum of the numbers itself.
In a formula:

$$(n+1)^2 - (n)^2 = (n+1) + n$$

Using this formula, we get:
(i) $100^2 - 99^2 = (99 + 1) + 99$
$= 199$
(ii) $111^2 - 109^2 = 111^2 - 110^2 + 110^2 - 109^2$
$= (111 + 110) + (110 + 109)$
$= 440$
(iii) $99^2 - 96^2 = 99^2 - 98^2 + 98^2 - 97^2 + 97^2 - 96^2$
$= 99 + 98 + 98 + 97 + 97 + 96$
$= 585$

********** END **********