EXERCISE # 1

- Q.1 Find the perfect square numbers between (i) 30 and 40 (ii) 50 and 60
- Q.2 Check whether the following numbers can be perfect squares ? Give reason.
 (i) 1057 (ii) 23453 (iii) 7928

(iv) 222222	(v) 1089	(vi) 2061

- Q.3 Write five numbers which you cannot decide just by looking at their unit's digit (or one's place) whether they are square numbers or not.
- Q.4 Which of 123^2 , 77^2 , 82^2 , 161^2 , 109^2 would end with digit 1 ?
- Q.5 Which of the following numbers would have digit 6 at unit place.
 (i) 19²
 (ii) 24²
 (iii) 26²
 (iv) 36²
 (v) 34²
- Q.6 What will be the "one's digit" in the square of the following numbers ?

(1) 1234	(11) 20387
(iii) 52698	(iv) 99880
(v) 21222	(vi) 9106

Q.7 The square of which of the following numbers would be an odd number/an even number ? Why ?

(i) 727 (ii) 158 (iii) 269 (iv) 1980

- Q.8 What will be the number of zeros in the square of the following numbers ? (i) 60 (ii) 400
- **Q.9** How many natural numbers lie between 9^2 and 10^2 ? Between 11^2 and 12^2 ?
- Q.10 How many non square numbers lie between the following pairs of numbers
 - (i) 100^2 and 101^2 (ii) 90^2 and 91^2

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(iii) 1000^2 and 1001^2

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Q.11 Find whether each of the following numbers is a perfect square or not ?

(i) 121 (ii) 55 (iii) 81 (iv) 49 (v) 69

- Q.12 Express the following as the sum of two consecutive integers. (i) 21^2 (ii) 13^2 (iii) 11^2 (iv) 19^2
- Q.13 Is it possible that the sum of any two consecutive positive integers is perfect square of a number ? Give example to support your answer.
- Q.14 Write the square, by any pattern. (i) 75 (ii) 95
- **Q.15** Find the value of $17^2 12^2 + 15^2 10^2$
- **Q.16** What will be the unit digit of the squares of the following numbers ?

(ii) 272
(iv) 3853
(vi) 26387
(viii) 99880
(x) 55555

- Q.17 The following numbers are obviously not perfect squares. Give reason.
 (i) 1057 (ii) 23453
 (iii) 2020202
 - (iii) 7928(iv) 222222(v) 64000(vi) 89722(vii) 222000(viii) 505050
- Q.18 The squares of which of the following would be odd numbers ?
 (i) 431 (ii) 2826
 (iii) 7779 (iv) 82004
- Q.19 Observe the following pattern and find the missing digits.

 $11^{2} = 121$ $101^{2} = 10201$ $1001^{2} = 1002001$ $100001^{2} = 1 \dots 2 \dots 1$ $10000001^{2} = \dots$

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- **Q.20** Observe the following pattern and supply the missing numbers.
 - $11^{2} = 1 \ 2 \ 1$ $101^{2} = 1 \ 0 \ 2 \ 0 \ 1$ $10101^{2} = 102030201$ $1010101^{2} = \dots^{2}$ = 10203040504030201
- Q.21 Using the given pattern, find the missing numbers. $1^2 + 2^2 + 2^2 = 3^2$ $2^2 + 3^2 + 6^2 = 7^2$ $3^2 + 4^2 + 12^2 = 13^2$
 - $4^{2} + 5^{2} + -^{2} = 21^{2}$ $5^{2} + -^{2} + 30^{2} = 31^{2}$ $6^{2} + 7^{2} + -^{2} = -^{2}$
- Q.22 Without adding, find the sum. (i) 1 + 3 + 5 + 7 + 9 (ii) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 (iii) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17 + 19 + 21 + 23

- Q.23 (i) Express 49 as the sum of first 7 odd numbers.
 - (ii) Express 121 as the sum of first 11 odd numbers.
- Q.24 How many numbers lie between squares of the following numbers ?
 - (i) 12 and 13 (ii) 25 and 26 (iii) 99 and 100
- Q.25 Find the square of the following numbers.
 - (i) 32 (ii) 35 (iii) 86 (iv) 93 (v) 71 (vi) 46
- Q.26 Write a pythagorena triplet whose one member is.
 - (i) 6 (ii) 14 (iii) 16 (iv) 18

ANSWER KEY

			EX	ERC	ISE	# 1			
1.	(i) 36, (ii) The	ere is not any perf	ect square	e numbe	r betwee	n 50 & 6	0.		
2.	(i) No (ii) No	(iii) No (iv) No	(v) Yes	it has 9 a	at unit pl	ace	(vi) Yes	it has 1	at unit place
3.	169, 38126, 591	, 100, 343795							
	: 2, 3, 7, 8 are	not an ones place	;						
	∴ numbers car	be perfect square	e or not						
4.	161^2 and 109^2			5. 24 ² , 2	26 ² , 36 ² ,	34 ²			
6.	(i) 6, (ii) 9	(iii) 4 (iv) 0	(v) 4	(vi) 6					
7.	(i) Odd ∵ unit p	place will be 9		(ii) Eve	n ∵ unit	place wi	ill be 4		
	(iii) Odd ∵ unit	place will be 1		(iv) Eve	en∵un	it place v	vill be 0		
8.	(i) Two	(ii) Four							
9.	(i) 18	(ii) 22							
10.	(i) 200	(ii) 180		(iii) 200	00				
11.	(i) Yes (ii) No	(iii) Yes	(iv) Yes	5	(v) No				
12.	(i) $21^2 = 441 = 2$	220 + 221	(ii) 13 ² =	= 169 =	84 + 85		(iii) 11 ²	= 121 =	60 + 61
	(iv) $19^2 = 361 =$	180 + 181							
13.	Yes. (i) 21^2	= 441 = 220 + 22	1	(ii) 13 ²	= 169 =	84 + 85		(iii) 11 ²	= 121 = 60 + 61
	(iv) $19^2 = 361 =$	180 + 181							
14.	(i) 5625	(ii) 9025							
15.	270								
16.	(i) 1 (ii) 4	(iii) 1 (iv) 9	(v) 6	(vi) 9	(vii) 4	(viii) 0	(ix) 6	(x) 5	
17.	These numbers	end with							
	(i) 7 (ii) 3	(iii) 8 (iv) 2	(v) 0	(vi) 2	(vii) 0	(viii) 0			
18.	(i) , (iii)								
19.	10000200001, 1	00000020000001							
20.	1020304030201	, 101010101 ²							
21.	20, 6, 42, 43								
22.	(i) 25 (ii) 100	(iii) 144							
23.	(i) $1 + 3 + 5 + 7$	+9+11+13							
	(ii) $1 + 3 + 5 + 7$	7 + 9 + 11 + 13 +	15 + 17 -	+ 19 + 2	1				
24.	(i) 24 (ii) 50	(iii) 198							
25.	(i) 1024	(ii) 1225	(iii) 739	96	(iv) 864	9	(v) 5041		(vi) 2116
26.	(i) 6, 8, 10	(ii) 14, 48, 50	(iii) 16,	63,65	(iv) 18,	80, 82			

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EXERCISE # 2

Q.1 What could be the possible 'one's' digits of the square root of each of the following numbers?
(i) 9801
(ii) 99856

(iii) 998001 (iv) 657666025

- Q.2 Without doing any calculation, find the numbers which are surely not perfect squares. (i) 153 (ii) 257 (iii) 408 (iv) 441
- Q.3 Find the square roots of 100 and 169 by the method of repeated subtraction.
- Q.4 Find the square roots of the following numbers by the prime Factorisation Method. (i) 729 (ii) 400 (iii) 1764 (iv) 4096 (v) 7744 (vi) 9604 (vii) 5929 (vii) 9216

(ix) 529 (x) 8100

Q.5 For each of the following numbers, find the smallest whole number by which it should be multiplied so as to get a perfect square number. Also find the square root of the square number so obtained.

(i) 252	(ii) 180
(iii) 1008	(iv) 2028
(v) 1458	(vi) 768

Q.6 For each of the following numbers, find the smallest whole number by which it should be divided so as to get a perfect square. Also find the square root of the square number so obtained.

(i) 252	(ii) 2925
(iii) 396	(iv) 2645
(v) 2800	(vi) 1620

- Q.7 The students of Class VIII of a school donated Rs 2401 in all, for Prime Minister's National Relief Fund. Each student donated as many rupees as the number of students in the class. Find the number of students in the class.
- **Q.8** 2025 plants are to be planted in a garden in such a way that each row contains as many plants as the number of rows. Find the number of rows and the number of plants in each row.

- **Q.9** Find the smallest square number that is divisible by each of the number 4,9 and 10.
- Q.10 Find the smallest square number that is divisible by each of the numbers 8,15 and 20.
- Q.11 Find the least number that must be subtracted from 5607 so as to get a perfect square. Also find the square root of the perfect square.
- Q.12 Find the greatest 5-digit number which is a perfect square.
- Q.13 Find the least number that must be added to 1300 so as to get a perfect square. Also find the square root of the perfect square
- Q.14 Find the square root of each of the following numbers by Division method. (i) 2304 (ii) 4489 (iii) 3481 (iv) 529
 - (v) 3249 (vi) 1369 (vii) 5776 (viii) 7921 (ix) 576 (x) 1024 (xi) 3136 (xii) 900
- Q.15 Find the number of digits in the square root of each of the following numbers (without any calculation).
 (i) 64 (ii) 144 (iii) 4489 (iv) 27225

(i) 04 (ii) 144 (iii) 4489 (v) 390625

- Q.16 Find the square root of the following decimal numbers.
 (i) 2.56 (ii) 7.29 (iii) 51.84 (iv) 42.25 (v) 31.36
- Q.17 Find the least number which must be subtracted from each of the following numbers so as to get a perfect square. Also find the square root of the perfect square so obtained.
 (i) 402 (ii) 1989 (iii) 3250 (iv) 825

(v) 4000

Q.18 Find the least number which must be added to each of the following numbers so as to get a perfect square. Also find the square root of the perfect square so obtained.

(i) 525 (ii) 1750 (iii) 252 (iv) 1825 (v) 6412

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- **Q.19** Find the length of the side of a square whose area is 441 m^2 .
- **Q.20** In a right triangle ABC, $\angle B = 90^{\circ}$.
 - (i) If AB = 6 cm, BC = 8 cm find AC
 - (ii) If AC = 13 cm, BC = 5 cm find AB
- Q.21 A gardener has 1000 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. Find the minimum number of plants he needs more for this.
- Q.22 There are 500 children in a school. For a P.T. drill they have to stand in such a manner that the number of rows is equal to number of columns. How many children would be left out in this arrangement.

ANSWER KEY

				EX	ERC	ISE ;	# 2		
1.	(i) 1, 9 (ii) 4, 6	5 (iii) 1, 9 ((iv) 5						
2.	(i), (ii), (iii)								
3.	10, 13								
4.	(i) 27 (ii) 20	(iii) 42 ((iv) 64 ((v) 88	(vi) 98	(vii) 77	(viii) 96	(ix) 23	(x) 90
5.	(i) 7; 42 (ii) 5; 3	30 ((iii) 7, 84	Ļ	(iv) 3; 7	8	(v) 2; 54		(vi)3;48
6.	(i) 7; 6 (ii) 13;	15 ((iii) 11; 6	5	(iv) 5; 2	3	(v) 7; 20		(vi) 5; 18
7.	49	8. 45 row	vs; 45 pla	ants in e	ach row		9. 900	10. 360)0
11.	74	12.9985	6		13. 69				
14.	(i) 48 (ii) 67	(iii) 59 ((iv) 23 ((v) 57	(vi) 37	(vii) 76	(viii) 89	(ix)24	(x) 32
	(xi) 56 (xii) 30)							
15.	(i) 1 (ii) 2	(iii) 2 ((iv) 3	(v) 3					
16.	(i) 1.6 (ii) 2.7	(iii) 7.2 ((iv) 6.5 ((v) 5.6					
17.	(i) 2; 20	(ii) 53; 44	4 ((iii) 1; 5	7	(iv) 41;	28	(v) 31; 6	3
18.	(i) 4; 23	(ii) 14; 42	2 ((iii) 4; 1	6	(iv) 24;	43	(v) 149;	81
19.	21 m	20. (i) 10	cm ((ii) 12 c	m				
21.	24 plants	22. 16 ch	ildren						