## EXERCISE

Q.1 Find the other two numbers for each of the numbers given below, making the three numbers Pythagorean triplets.

(a) 6 (b) 15 (c) 50 (d) 3

- Q.2 Without adding, find the value of the following -(a) 1 + 3 + 5
  - (b) 1 + 3 + 5 + 7 + 9 + 11
  - (c) 1 + 3 + 5 + 7 + 9
  - (d) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17
- Q.3 Find the cube roots of the following numbers by successive subtraction of numbers :

  7, 19, 37, 61, 91, 127, 169, 217, 271, 331, 397, .......
  (a) 125
  (b) 343
  (c) 1728
  (d) 512
  (e) 1331
- Q.4 Using the method of successive subtraction, examine if the following numbers are perfect cubes. If not, find the smallest number which must be subtracted from the numbers so as to make them perfect cubes. Also, find their cube roots.

(a) 70 (b) 221 (c) 735 (d) 1011 (e) 349

Q.5 Solve and find values of a, b, c (a)  $4a + 3(6-2) + 25 \div 5 = 21$ (b)  $(15 \div 5) + 3 \times 4 - b = 17$ (c)  $a(18 + 3) + 4 \times 5 \div 2 - 7 = 45$ (d)  $2 \times 3 + 14 \div 7 + 6 - 7c = 35$ (e)  $48 \div 12 \times \left(\frac{9}{8} \text{ of } \frac{4}{3} \div \frac{3}{4} \text{ of } \frac{2}{3} + a\right) = 6$ (f)  $10 - [9 - \{8 - (7 - 6)\}] - c = 3$  (Ques. Q.6 to Q.9) Find a, b, c in the following.

- Q.6 (a) 7a + 43b + c = 518, where a, b, c are in the units place and c < a < b.
  - (b) a36 + b8 + c = 317, where a is in the hundred digit, b is the tens digit and c is the ones digit.
- **Q.7** a38 + b3 + 5c = 745
- **Q.8** a96 43c + 402 b2 = 814
- **Q.9** a62 473 + 2b6 105 + 43c = 1106
- **Q.10** Fill in the blanks.
  - (a) The square of any natural number n can be written as the sum of \_\_\_\_\_ odd numbers.
  - (b) When divided by 3, a perfect square leaves a remainder of \_\_\_\_\_ or \_\_\_\_.

Q.11 Investigate the patterns.  $1^3 + 2^3$  $1^3 + 2^3 + 3^3$ 

Q.12 Create pattern. Investigate what is  $1 \times 2 \times 3 \times 4 + 1$   $2 \times 3 \times 4 \times 5 + 1$  $3 \times 4 \times 5 \times 6 + 1$ 

Using this find value of a, b, c, d if  $a \times b \times c \times d + 1 = 1681$ 

Q.13 Find the values of unknowns.

(a) 2 5 x 4	(b)		4	p	) (	q
+ y 5 2 8		+	7	6	; ;	8
12102		1	r	2	; (	0
(c) b 4 a	(d)		2	a	4	2
-6 8 5		>	<		2	a
<u>2 c 8</u>		1	b	8	b	2
		5	2	8	4	0
		a	8	a	9	2

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## **ANSWER KEY**

## EXERCISE

 1. (a) 8, 10
 (b) 8, 17
 (c) 40, 30
 (d) 4, 5
 2. (a) 9
 (b) 36
 (c) 25
 (d) 81

 3. (a) 5
 (b) 7
 (c) 12
 (d) 8
 (e) 11
 4. (a) 6, 4
 (b) 5, 6
 (c) 6, 9
 (d) 11, 10
 (e) 6, 7

 5. (a) 1
 (b) -2
 (c) 2
 (d) -3
 (e)  $\frac{-7}{3}$  (f) 5
 6. (a) a = 5, b = 9, c = 4 or a = 6, b = 8, c = 4
 (b) a = 2, b = 7, c = 3

 7. a = 6, b = 5, c = 4
 8. a = 8, b = 6, c = 2
 9. a = 9, b = 8, c = 6
 10. (a) n
 (b) 0, 1

 11.1<sup>3</sup> + 2<sup>3</sup> = 9 = 3<sup>3</sup>; 1<sup>3</sup> + 2<sup>3</sup> + 3<sup>3</sup> = 36 = 6<sup>2</sup>
 12. a = 5, b = 6, c = 7, d = 8

 13. (a) x = 7, y = 9
 (b) q = 2, p = 5, r = 2
 (c) a = 3, c = 5, b = 8
 (d) a= 6, b = 5