

3. MULTIPLES AND FACTORS

Class: VI, Mathematics ①

2025/26

FOUNDATION: SOLUTIONS

TEACHING TASK
MAINS LEVEL

2025/26

01. multiples of 8 = 8, 8x2, 8x3, 8x4, 8x5
sum = 8(1+2+3+4+5)
= 8x15
= 120

Ans: -

02. 13

Ans: A

03. 7

Ans: C

04. 5

Ans: A

05. A) $24 = 2^3 \times 3$

No. of factors = $(3+1)(1+1) = 4 \times 2 = 8$

B) $30 = 2^1 \times 3^1 \times 5^1$

No. of factors = $(1+1)(1+1)(1+1) = 2 \times 2 \times 2 = 8$

C) $42 = 2^1 \times 3^1 \times 7^1$

No. of factors = $(1+1)(1+1)(1+1) = 2 \times 2 \times 2 = 8$

Ans: D.

06

$$36 = 2^2 \times 3^2$$

(2)

$$\text{No. of factors} = (2+1)(2+1) = 3 \times 3 = 9$$

Ans: —

07 option verification (c)

55, 60, 65.

$$\text{Sum} = 55 + 60 + 65 = 180$$

Ans: C

08. $9 \times 14 = 126$

Ans: B

09. $21 + 23 = 44$

Ans: A

10. $1+6=7, 3+4=7$

Ans: D

11. $2 \times 3 = 6$

$$a \times b = c$$

A) 6 is not a factor of 2 and 3

Ans: A

12. 1995

Ans: B

13. 1002

Ans: A

14. ~~2~~ 2 is a factor of 12

$$\text{Factors of } 2 = \{1, 2\}$$

$$\text{Factors of } 12 = \{1, 2, 3, 4, 6, 12\}$$

$$\text{No. of common factors} = 2$$

Ans: B

15 Conceptual D

Ans: D

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01. Conceptual.

Ans: A, B, D

02. A) Factors of 6 = $\{1, 2, 3, 6\}$

$$\text{Sum} = 1 + 2 + 3 + 6 = 12 = 2 \times 6$$

B) Factors of 10 = $\{1, 2, 5, 10\}$

$$\text{Sum} = 1 + 2 + 5 + 10 = 18 \neq 2 \times 10$$

C) Factors of 28 = $\{1, 2, 4, 7, 14, 28\}$

$$\text{Sum} = 1 + 2 + 4 + 7 + 14 + 28 = 56 = 2 \times 28$$

D) Factors of 496 = $\{1, 2, 4, 8, 16, 31, 62, 124, 248, 496\}$.

$$\text{Sum} = 992 = 2 \times 496.$$

$\therefore 6, 28$ and 992 are perfect numbers

Ans: A, C, D

03. Statement I: Conceptual (True)

Statement II: Conceptual (False)

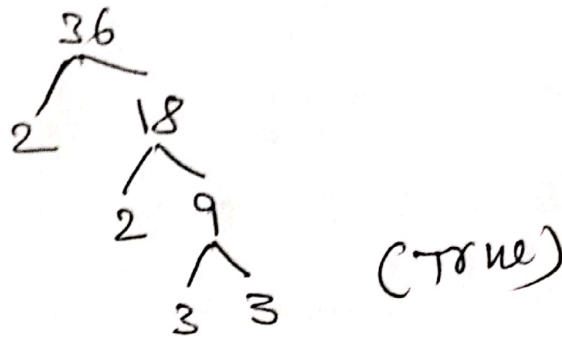
Ans: C

04. Statement I: Conceptual (False)

Statement II: Conceptual (True)

Ans: D

05. Assertion: C



Ans: ~~B~~

Reason: True

06. Assertion: Conceptual (True)

Since $45 \times 3 = 135$

Ans: A

Reason: Conceptual (True)

07. $90 = 2^1 \times 3^2 \times 5^1$

No. of factors of 90 = $(1+1)(2+1)(1+1)$

$= 2 \times 3 \times 2$
 $= 12$

```
graph TD
    90 --- 2
    90 --- 45
    45 --- 3
    45 --- 15
    15 --- 3
    15 --- 5
```

Ans: C

08. c) $81 = 3^4$

No. of factors = $4+1 = 5$

```
graph TD
    81 --- 3
    81 --- 27
    27 --- 3
    27 --- 9
    9 --- 3
    9 --- 3
```

Ans: C

09. $60 = 2^2 \times 3 \times 5$

Ans: B

10. $84 = 2 \times 2 \times 3 \times 7 =$

Ans: A

11.

Divisors of 28 = {1, 2, 4, 7, 14, 28}
proper divisors of 28 = {1, 2, 4, 7, 14}
Sum = 1 + 2 + 4 + 7 + 14 = 28

Ans: 28

12

$$\begin{array}{r} 2 \overline{) 210} \\ 3 \overline{) 105} \\ 5 \overline{) 35} \\ 7 \end{array}$$
$$: 210 = 2 \times 3 \times 5 \times 7$$

Ans: 4

13

- a) 5 is a factor of 45 (q)
- b) 6 is a multiple of 2 (p)
- c) 4 and 6 are factors of 24 (x)
- d) 3 divides 18 (s)

Ans: q, p, x, s

14

a) $90 \rightarrow$ $: 90 \rightarrow 2, 3, 3, 5$ (s)
$$\begin{array}{c} 90 \\ \swarrow \searrow \\ 2 \quad 45 \\ \quad \swarrow \searrow \\ \quad 3 \quad 15 \\ \quad \quad \swarrow \searrow \\ \quad \quad 3 \quad 5 \end{array}$$

- b) $84 \rightarrow 2, 2, 3, 7$ (q)
- c) $72 \rightarrow 2, 2, 2, 3, 3$ (p)
- d) $60 \rightarrow 2, 2, 3, 5$ (x)

Ans s, q, p, x

LEARNERS TASK

CUB'S

(6)

01.	$1 \times 2 \times 3 \times 4 \times 5 = 120$	Ans: A
02.	$18 = \{1, 2, 3, 6, 9, 18\}$ 6 Total = 6	Ans: B
03.	Conceptual	Ans: A
04.	Conceptual	Ans: C
05.	Conceptual	Ans: D
06.	Conceptual	Ans: A
07.	70	Ans: B
08.	6 and 28 are perfect numbers	Ans: D
09.	Conceptual	Ans: D
10.	6	Ans: C
11.	Factors of 100 = $\{1, 2, 4, 5, 10, 20, 25, 50, 100\}$ Sum = $1 + 2 + 4 + 5 + 10 + 20 + 25 + 50 + 100$ = 217.	Ans: D

12 Conceptual

Ans: ⁽⁷⁾B

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01.

$$\begin{array}{r} 2 \overline{) 8, 12} \\ 2 \overline{) 4, 6} \\ \hline 2 \quad 1 \quad 3 \end{array}$$

$$\begin{aligned} \text{L.C.M} &= 2 \times 2 \times 2 \times 3 \\ &= 24 \end{aligned}$$

Ans: A

02.

multiples of 9 = 9, 9x2, 9x3, 9x4, 9x5, 9x6, 9x7

$$\begin{aligned} \text{Sum} &= 9(1+2+3+4+5+6+7) \\ &= 9 \times 28 \\ &= 252 \end{aligned}$$

Ans: C

03.

$$\text{No. of factors of } 100 = 9$$

Ans: B

04.

73 is a factor of 1533

$$\text{Since } \frac{1533}{73} = 21$$

Ans: B

05.

$$1024 = 2^{10}$$

$$\text{No. of factors} = 10 + 1 = 11$$

Ans: A

06.

100th multiple of 10 = 1000

least factor of 10 = 1

$$\therefore \text{Sum} = 1000$$

Ans: A

07. Example

⑧

2 is a factor of 6 and 6 is a multiple of 3

here $x=2$, $y=6$, $z=3$

A) $x \cdot z = y$ (True)

B) $x + z \neq y$ (False)

C) 2, 3 are factors of 6 (True)

Ans: D

08. Conceptual

Ans: C

09. Conceptual

Ans: A

10. Conceptual

Ans: B

11. Conceptual

Ans: D

12. Conceptual

Ans: B

13. ~~not~~ Example: Multiples of 2 are 2, 4, 6, 8, 10, 12

$x=2$, $y=4$, $z=6$, $w=8$, $s=10$

$$x + y + w + s = 2 + 4 + 8 + 10 = 24 \\ = 4 \times 6.$$

Ans: C

14. Let $a, 2a, 3a, 4a, 5a$ be the consecutive multiples of a number a . (9)

Given $a + 2a + 3a + 4a + 5a = 45$

$$\Rightarrow 15a = 45$$

$$\Rightarrow a = 3$$

$$5a = 5 \times 3 = 15$$

next multiple is $15 + 3 = 18$

Ans: C

15. Example:

1 is a factor of 2,

2 is a factor of 4,

4 is a factor of 16

Here $a = 1$

$b = 2$

$c = 4$

$d = 16$.

16 is a factor of $1 \times 2 \times 4 = 8$
multiple

please, change the question " If a is a factor of b , b is a factor of c , c is a factor of d , then d is a multiple of abc

Ans: B

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01) $48 = 2 \times 2 \times 2 \times 2 \times 3$
 ~~$2 \times 2 \times 2$~~

Ans = A

02) Conceptual

Ans: A, B, C, D

03 Statement I: Conceptual (False)

10

Statement II: Conceptual (True)

Ans: D

04 Statement I: Conceptual (True)

Ans: A

Statement II: Conceptual (True)

05 Assertion I: Conceptual (False)

Since, 2 is even number but not composite

Reason: Conceptual (True)

Ans: D

06 Assertion: Conceptual (False)

Reason: Conceptual (True)

Ans: D

07. A) $18 = 2^1 \times 3^2$

No. of factors = $(1+1)(2+1) = 2 \times 3 = 6$ (Even)

B) $16 = 2^4$

No. of factors = $4+1 = 5$ (odd)

Ans: B

08 $49 = 7^2$

No. of factors = $2+1 = 3$

Ans: A

09. Conceptual

Ans: C

10. 5 is a factor of 15

⑪
Ans: A

11. 12

Ans: 12

12. multiples of 7 = 7, 7x2, 7x3, 7x4, 7x5

$$\text{Sum} = 7(1+2+3+4+5)$$

$$= 7 \times 15$$

$$= 105$$

Ans: 105

13. a) $36 = 2^2 \times 3^2$

$$\text{No. of factors} = (2+1)(2+1) = 3 \times 3 = 9 (p)$$

b) $16 = 2^4$

$$\text{No. of factors} = 4+1 = 5 (q)$$

c) $7 = 7^1$

$$\text{No. of factors} = 1+1 = 2 (r)$$

d) $30 = 2 \times 3 \times 5$

$$\text{No. of factors} = (1+1)(1+1)(1+1) = 2 \times 2 \times 2 = 8 (s)$$

Ans: p, q, r, s

14. a) 6 is a perfect number (p)

b) 12 is an even composite number (q)

c) 1 is neither prime nor composite (r)

d) 3 is a prime number (s)

Ans: p, q, r, s

⇒ THE END ⇐