ST. ANDREWS SCOTS SCHOOL

Adjacent Navniti Apartments,
I.P. Extension, Patparganj, Delhi-110092

Session: 2025-2026

Class: V **Subject: Mathematics** **Topic: Unit -5 (Factors & Multiples)**

Questions to be done-

Ex-1 Q.1(Book)

Q.2 and Q.3(Notebook)

Ex -2 Q.1(1,3,5)(Notebook)

Q.2(d,c)(Notebook)

Ex -3 Q.1 (Book)

Q.2 and Q.3(Notebook)

Ex-4 Q.1(a,c,e)(Notebook)

Q.2(b,d)(Notebook)

Q.3(a)(Book)

Q.3(b)(Homework)

Ex-5 Q.1(Book)

Q.2(a,d)(Notebook)

Q.3,Q.4(a,d)(Notebook)

Q.5(a,d)(Notebook)

Ex-6 Q.1(Book)

Q.2(a,d)(Notebook)

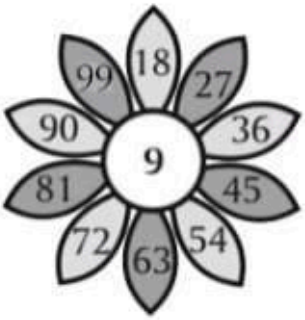
Q.3(a,d)(Notebook)

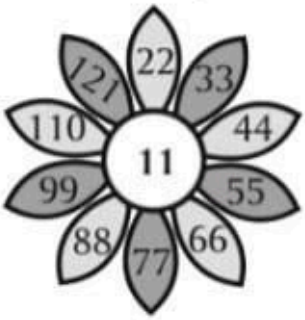
Ex-7 Q.1 and Q.3(b)(Notebook)

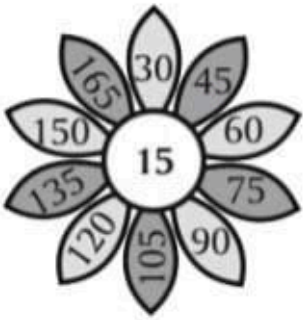
+ mental Maths corner + Worksheet

Lesson-5 : Factors and Multiples

Warm Up

2. 

3. 

4. 

Exercise-1

1. (a) (iv) $45 = 1 \times 45$, $45 = 3 \times 15$, $45 = 5 \times 9$

The factors of 45 are 1, 3, 5, 9, 15, 45.

(b) (iii)

$$\begin{array}{r} 121 \\ 7\overline{)\,847} \\ -\,7 \\ \hline 14 \\ -\,14 \\ \hline 07 \\ -\,7 \\ \hline 0 \end{array}$$

So, 847 is a multiple of 7.

$$\begin{array}{r} 13 \\ 18\overline{)\,234} \\ -\,18 \\ \hline 54 \\ -\,54 \\ \hline 0 \end{array}$$

So, 234 is a multiple of 18.

$$\begin{array}{r} 7 \\ 15\overline{)\,108} \\ -\,105 \\ \hline 3 \end{array}$$

So, 15 is not a factor of 108.

$$\begin{array}{r} 9 \\ 12\overline{)\,108} \\ -\,108 \\ \hline 0 \end{array}$$

So, 12 is a factor of 108.

2. 32,36,40,44,48,52,56

3. 11, 22, 33, 44, 55, 66, 77, 88, 99

Exercise-2

1. 7390

By 2 $\Rightarrow$ 7390 has 0 at its ones place, so, it is divisible by 2.

By 3 $\Rightarrow$ The sum of digits of 7390 = 7 + 3 + 9 + 0 = 19, which is not divisible by 3, so, 7390 is not divisible by 3.

By 4 $\Rightarrow$ Number formed by last two digits of 7390 is 90, which is not divisible by 4, so, 7390 is not divisible by 4.

By 5 $\Rightarrow$ 7390 has 0 at its ones place, so, it is divisible by 5.

By 6 ⇒ 7390 is divisible by 2 but not divisible by 3.
So, it is not divisible by 6.
By 9 ⇒ The sum of digits of 7390 = 19, which is not divisible by 9, so, 7390 is not divisible by 9.
By 10 ⇒ 7390 has 0 at its ones place, so, it is divisible by 10.

628712

By 2 ⇒ 628712 has 2 at its ones place, so it is divisible by 2.
By 3 ⇒ The sum of the digits of 628712 = 6 + 2 + 8 + 7 + 1 + 2 = 26, which is not divisible by 3. So, 628712 is not divisible by 3.
By 4 ⇒ The number formed by last two digits of 628712 is 12, which is divisible by 4. So, 628712 is divisible by 4.
By 5 ⇒ 628712 has 2 at its ones place, so it is not divisible by 5.
By 6 ⇒ 628712 is not divisible by 6 as it is not divisible by 3.
By 9 ⇒ 628712 is not divisible by 9 as the sum of its digits is not divisible by 9.
By 10 ⇒ 628712 has 2 at its ones place, so it is not divisible by 10.

20994

By 2 ⇒ 20994 has 4 at its ones place, so it is divisible by 2.
By 3 ⇒ The sum of the digits of 20994 = 2 + 0 + 9 + 9 + 4 = 24, which is divisible by 3. So, 20994 is divisible by 3.
By 4 ⇒ The number formed by last two digits of 20994 is 94, which is not divisible by 4. So, 20994 is not divisible by 4.
By 5 ⇒ 20994 has 4 at its ones place, so it is not divisible by 5.
By 6 ⇒ 20994 is divisible by both 2 and 3, so, it is divisible by 6.
By 9 ⇒ The sum of the digits of 20994 = 24, which is not divisible by 9. So, 20994 is not divisible by 9.
By 10 ⇒ 20994 has 4 at its ones place, so it is not divisible by 10.

43490

By 2 ⇒ 43490 has 0 at its ones place, so it is divisible by 2.
By 3 ⇒ The sum of the digits of 43490 = 4 + 3 + 4 + 9 + 0 = 20, which is not divisible by 3. So, 43490 is not divisible by 3.
By 4 ⇒ The number formed by last two digits of 43490 is 90, which is not divisible by 4. So, 43490 is not divisible by 4.
By 5 ⇒ 43490 has 0 at its ones place, so it is divisible by 5.
By 6 ⇒ 43490 is not divisible by 6 as it is not divisible by 3.
By 9 ⇒ 43490 is not divisible by 9 as the sum of its digits is not divisible by 9.
By 10 ⇒ 43490 has 0 at its ones place, so it is divisible by 10.

426564

By 2 ⇒ 426564 has 4 at its ones place, so it is divisible by 2.

By 3 ⇒ The sum of the digits of 426564 = 4 + 2 + 6 + 5 + 6 + 4 = 27, which is divisible by 3. So, 426564 is divisible by 3.

By 4 ⇒ The number formed by last two digits of 426564 is 64, which is divisible by 4. So, 426564 is divisible by 4.

By 5 ⇒ 426564 has 4 at its ones place, so it is not divisible by 5.

By 6 ⇒ 426564 is divisible by 6 as it is divisible by both 2 and 3.

By 9 ⇒ The sum of the digits of 426564 = 27, which is divisible by 9. So, 426564 is divisible by 9.

By 10 ⇒ 426564 has 4 at its ones place, so it is not divisible by 10.

Number	by 2	by 3	by 4	by 5	by 6	by 9	by 10
7390	✓	✗	✗	✓	✗	✗	✓
628712	✓	✗	✓	✗	✗	✗	✗
20994	✓	✓	✗	✗	✓	✗	✗
43490	✓	✗	✗	✓	✗	✗	✓
426564	✓	✓	✓	✗	✓	✓	✗

2. (a) Number formed by last three digits of 8344 is 344.

344 is divisible by 8, so, 8344 is divisible by 8.

(b) Sum of the digits at odd places = 8 + 3 + 6 + 0 = 17

Sum of the digits at even places = 0 + 9 + 1 + 7 = 17

Difference = 17 – 17 = 0

Thus, 70169308 is divisible by 11.

(c) Twice the digit at ones place, 1 × 2 = 2

Difference = 1227 – 2 = 1225

Again, twice the digit at ones place = 2 × 5 = 10

Difference = 122 – 10 = 112

Again, twice the digit at ones place, 2 × 2 = 4

Difference = 11 – 4 = 7

Thus, 12271 is divisible by 7.

Exercise-3

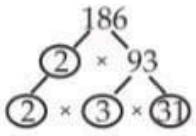
1. **(a)** (ii) The greatest 2-digit prime number is 97.
   So, the cricketer scored 97 runs.
   (b) (ii) The smallest 2-digit prime number is 11.
   (c) (iv) The smallest odd prime number is 3.
   (d) (iv) The smallest odd composite number is 9.
2. 16 can be written as the sum of two prime numbers as follows :
   $16 = 3 + 13$, $16 = 5 + 11$
   So, she can distribute *laddoos* as (3 and 13) or (5 and 11).
3. There are 25 prime numbers from 1 to 100.

Research Based : 28, 496 and 8128 are perfect numbers.

Critical Thinking : 90, 91, 92, 93, 94, 95, 96

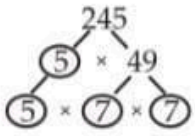
Exercise-4

1. **(a)**



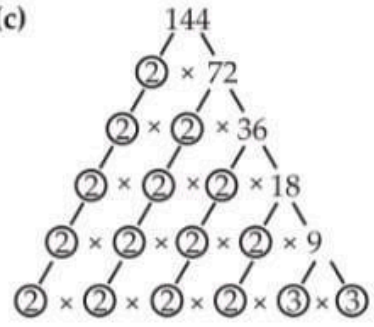
$186 = 2 \times 3 \times 31$

(b)



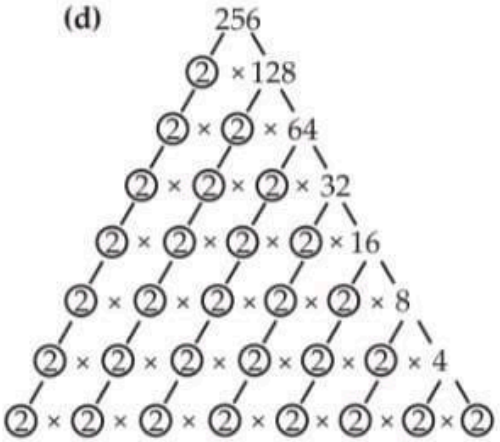
$245 = 5 \times 7 \times 7$

(c)



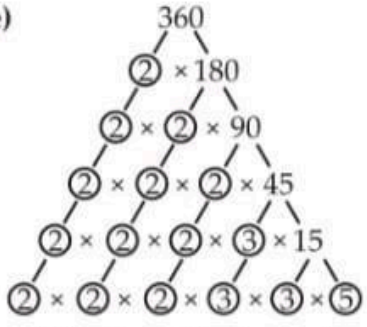
$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

(d)



$256 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

(e)



$360 = 2 \times 2 \times 2 \times 3 \times 3 \times 5$

2. (a)

2	98
7	49
7	7
	1

$98 = 2 \times 7 \times 7$

(b)

2	144
2	72
2	36
2	18
3	9
3	3
	1

$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

(c)

2	168
2	84
2	42
3	21
7	7
	1

$168 = 2 \times 2 \times 2 \times 3 \times 7$

(d)

2	216
2	108
2	54
3	27
3	9
3	3
	1

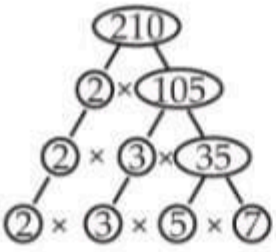
$216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$

(e)

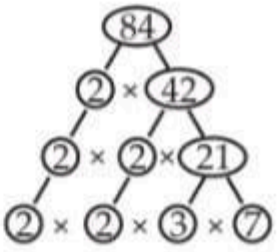
2	300
2	150
3	75
5	25
5	5
	1

$300 = 2 \times 2 \times 3 \times 5 \times 5$

3. (a)



(b)



Exercise-5

1. (a) (i) The greatest length (in metres) of the pieces that can be cut is the HCF of 48, 80 and 96.

Let us find the HCF of 48, 80 and 96 by the prime factorisation method.

2 | 48
2 | 24
2 | 12
2 | 6
3 | 3
1

2 | 80
2 | 40
2 | 20
2 | 10
5 | 5
1

2 | 96
2 | 48
2 | 24
2 | 12
2 | 6
3 | 3
1

$48 = ② \times ② \times ② \times ② \times 3$

$80 = ② \times ② \times ② \times ② \times 5$

$96 = ② \times ② \times ② \times ② \times 2 \times 3$

HCF of 48, 80 and 96 = Product of the common prime factors

$= 2 \times 2 \times 2 \times 2 = 16$

So, the required length is 16 m.

(b) (iii) The greatest number that divides 735 and 1155 exactly, leaving no remainder is their HCF.

$$735\overline{)1155}\ (1$$
$$-735$$
$$420\overline{)735}\ (1$$
$$-420$$
$$315\overline{)420}\ (1$$
$$-315$$
$$105\overline{)315}\ (3$$
$$-315$$
$$0$$

HCF of 735 and 1155 is 105.

Thus, the required number is 105.

(c) (ii) Since 5 is the remainder when 245 and 1029 are divided by the required number, therefore, 245 – 5 = 240 and 1029 – 5 = 1024 must be exactly divisible by that number.

Thus, the required number is the HCF of 240 and 1024.

$$240\overline{)1024}\ (4$$
$$-960$$
$$64\overline{)240}\ (3$$
$$-192$$
$$48\overline{)64}\ (1$$
$$-48$$
$$16\overline{)48}\ (3$$
$$-48$$
$$0$$

HCF of 240 and 1024 is 16.

So, the greatest number that divides 245 and 1029 leaving remainder 5 in each case is 16.

2. (a)

$$
\begin{array}{r}
2 \\
2025\overline{)\,5184} \\
-4050 \quad 1 \\
\hline
1134\overline{)\,2025} \\
-1134 \quad 1 \\
\hline
891\overline{)\,1134} \\
-891 \quad 3 \\
\hline
243\overline{)\,891} \\
-729 \quad 1 \\
\hline
162\overline{)\,243} \\
-162 \quad 2 \\
\hline
81\overline{)\,162} \\
-162 \\
\hline
0
\end{array}
$$

HCF of 2025 and 5184 = 81

(b)

$$
\begin{array}{r}
1 \\
4410\overline{)\,8064} \\
-4410 \quad 1 \\
\hline
3654\overline{)\,4410} \\
-3654 \quad 4 \\
\hline
756\overline{)\,3654} \\
-3024 \quad 1 \\
\hline
630\overline{)\,756} \\
-630 \quad 5 \\
\hline
126\overline{)\,630} \\
-630 \\
\hline
0
\end{array}
$$

HCF of 4410 and 8064 = 126

(c) We first find the HCF of 264 and 840.

$$
\begin{array}{r}
3 \\
264\overline{)\,840} \\
-792 \quad 5 \\
\hline
48\overline{)\,264} \\
-240 \quad 2 \\
\hline
24\overline{)\,48} \\
-48 \\
\hline
0
\end{array}
$$

HCF of 264 and 840 is 24.

Now, we will find the HCF of 24 and 384.

$$
\begin{array}{r}
16 \\
24\overline{)\,384} \\
-24 \\
\hline
144 \\
-144 \\
\hline
0
\end{array}
$$

384 is exactly divisible by 24.

HCF of 24 and 384 = 24.

HCF of 264, 840 and 384 is 24.

(d) We first find the HCF of 625 and 3125.

$$\begin{array}{r} 5 \\ 625\overline{)\,3125} \\ -3125 \\ \hline 0 \end{array}$$

HCF of 625 and 3125 is 625.

Now, we will find the HCF of 625 and 15625.

$$\begin{array}{r} 25 \\ 625\overline{)\,15625} \\ -1250 \\ \hline 3125 \\ -3125 \\ \hline 0 \end{array}$$

HCF of 625 and 15625 is 625.

HCF of 625, 3125 and 15625 is 625.

3. Since 4, 5 and 6 respectively, are the remainders when 28, 41 and 66 are divided by the required number, therefore, $28 - 4 = 24$, $41 - 5 = 36$, $66 - 6 = 60$ must be exactly divisible by that number.

The required number is the HCF of 24, 36 and 60.

2	24
2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

2	60
2	30
3	15
5	5
	1

$24 = ② \times ② \times 2 \times ③$

$36 = ② \times ② \times ③ \times 3$

$60 = ② \times ② \times ③ \times 5$

HCF of 24, 36 and 60 is $2 \times 2 \times 3 = 12$.

So, the greatest number which divides 28, 41 and 66 leaving remainders 4, 5 and 6 respectively is 12.

4. (a) Factors of 16 are ①, ②, ④, ⑧, 16.

Factors of 56 are ①, ②, ④, 7, ⑧, 14, 28, 56.

Common factors of 16 and 56 are 1, 2, 4 and 8.

Highest common factor (HCF) of 16 and 56 is 8.

(b) Factors of 36 are ①, ②, ③, ④, ⑥, 9, ⑫, 18, 36.

Factors of 60 are ①, ②, ③, ④, 5, ⑥, 10, ⑫, 15, 20, 30, 60.

Common factors of 36 and 60 are 1, 2, 3, 4, 6 and 12.

Highest common factor (HCF) of 36 and 60 is 12.

(c) Factors of 30 are ①, ②, 3, ⑤, 6, ⑩, 15, 30.
Factors of 50 are ①, ②, ⑤, ⑩, 25, 50.
Common factors of 30 and 50 are 1, 2, 5 and 10.
Highest common factor (HCF) of 30 and 50 is 10.

(d) Factors of 72 are ①, ②, ③, ④, ⑥, ⑧, 9, ⑫, 18, ㉔, 36, 72.
Factors of 48 are ①, ②, ③, ④, ⑥, ⑧, ⑫, 16, ㉔, 48.
Common factors of 72 and 48 are 1, 2, 3, 4, 6, 8, 12 and 24.
Highest common factor (HCF) of 72 and 48 is 24.

5. (a)

2	60
2	30
3	15
5	5
	1

2	72
2	36
2	18
3	9
3	3
	1

$60 = ② \times ② \times ③ \times 5$
$72 = ② \times ② \times 2 \times ③ \times 3$
HCF of 60 and 72 = product of common prime factors
$= 2 \times 2 \times 3 = 12$

(b)

3	81
3	27
3	9
3	3
	1

2	64
2	32
2	16
2	8
2	4
2	2
	1

$81 = 3 \times 3 \times 3 \times 3$
$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$
HCF of 81 and 64 = 1

(c)

2	42
3	21
7	7
	1

2	70
5	35
7	7
	1

2	84
2	42
3	21
7	7
	1

$42 = ② \times 3 \times ⑦$
$70 = ② \times 5 \times ⑦$
$84 = ② \times 2 \times 3 \times ⑦$
HCF of 42, 70 and 84
$= 2 \times 7 = 14$

(d)

2	144
2	72
2	36
2	18
3	9
3	3
	1

2	180
2	90
3	45
3	15
5	5
	1

2	192
2	96
2	48
2	24
2	12
2	6
3	3
	1

$144 = ② \times ② \times 2 \times 2 \times ③ \times 3$
$180 = ② \times ② \times ③ \times 3 \times 5$
$192 = ② \times ② \times 2 \times 2 \times 2 \times 2 \times ③$
HCF of 144, 180 and 192
$= 2 \times 2 \times 3 = 12$