

Exercise 10

1. The factors of 9 are 3, 9 (from 3, 4, 5, 6, 7, 8, 9)
2. The ~~common~~ factors of 36 = 1, 2, 3, 4, 6, 9, 12 ...
The factors of 24 = 1, 2, 3, 4, 6, 8, 12 ...
 \therefore The common factors of 36 and 24 are 1, 2, 3, 4, 6, 12
3. (a) The smallest multiple of 5 = 5
(b) The first three multiples of 6 = 6, 12, 18
(c) The multiple of 11 which is greater than 50 but less than 60 is = 55 ($11 \times 5 = 55$)
4. (a) The first ten prime numbers are - 1, 2, 3, 5, 7, 11, 13, 17, 19, 23
(b) The first ten composite numbers are - 4, 6, 8, 9, 10, 12, 14, 15, 16, 18
(c) The first ten odd-composite numbers are - 9, 15, 21, 25, 27, 33, 35, 39, 45, 49
5. (a) ~~7 and 14~~
Factors of 7 = 1, 7
Factors of 14 = 1, 2, 7, 14
7 and 14
 $7, 14 = 7 \times 2$
 $18, 17 = 1$
 $36, 25 = 1$
 $35 \text{ and } 21 = 1 \times 7$
5. (b) 18 and 17 are coprime numbers.
(c) 36 and 25 are coprime numbers.
6. (a) 27, 138, 3036, 56311
27 is odd number, so ^{it is} not divisible by 2
138 is even number, so it is divisible by 2
3036 is even number, so it is divisible by 2
56311 is odd number, so it is ^{not} divisible by 2.

6. (a) 27, 138, 3036, 56311 2

Here, only 138, and 3036 are even numbers.

So, these two numbers are divisible by 2

(b) 40, 712, 5422, 33308 4
Here, 40 ($4+0=4$), 712 ($7+1+2=10$), ~~33308 ($3+3+3+0+8=17$)~~

(c) 75, 396, 1112, 30312 3

Here, 75 ($7+5=12$), 396 ($3+9+6=18$), 30312 ($3+0+3+1+2=9$)

are divisible by 3, because their sums are divisible by 3.

(d) 40, 712, 5422, 33308 4

Here, 40, 712 and 33308 are divisible by 4 because their last two digits are divisible by 4.

(e) 95, 556, 2360, 13134 5

Here, 95 and 2360 are divisible by 5 because they have 5 and 0 in their ones positions respectively.

(f) 85, 840, 9005, 18760 10

Here, 840 and 18760 are divisible by 10 because they have 0 in their ones positions.

(g) 96, 726, 9824, 76504 8

Here, 96, 9824, 7654 are divisible by both 2 and 4. So these are divisible by 8.

(g) 56, 108, 2372, 15606 9

Here, 108 and 15606 are divisible by 9 because their sums of digits are divisible by 9.

[108 (1+0+8=9), 15606 (1+5+6+0+6=18)]

(h) 97, 506, 2354, 83908 11

Here, 506 $[5+6-0=11]$, 2354 $[(2+5)-(3+4)=0]$ and 83908 $[(8+9+8)-(3+0)=22]$

are divisible by 11 because the difference between the sum of the digits in odd places and the sum of the digits in even places of each number are either 0 or a multiple of 11.

7. (a) 36 is divisible by 6 because it is divisible by both 2 and 3.

(b) 333 is not divisible by 6 because it is ^{not} divisible by both 2 and 3. [333 is not divisible by 2]

(c) 4326 is divisible by 6 because it is divisible by both 2 and 3.

(d) 98762 is not divisible by 6 because it is not divisible by both 2 and 3. [98762 is not divisible by 3]

8. (a) 129 is not divisible by 12 because it is not divisible by both 3 and 4. [129 is not divisible by 4]

(b) 4896 is divisible by 12 because it is divisible by both 3 and 4.

(c) 79968 is divisible by 12 because it is divisible by both 3 and 4.

(d) 123452 is not divisible by 12 because it is not divisible by both 3 and 4. [123452 is not divisible by 3]

9. (a) 390 is divisible by 15 because it is divisible by both 3 and 5.

(b) ~~308~~⁷⁸²⁵ is not divisible by 15 because it is not divisible by both 3 and 5. [7825 is not divisible by 3]

(c) 90875 is not divisible by 15 because it is not divisible by both 3 and 5. [90875 is not divisible by 3]

(d) 123450 is divisible by 15 because it is divisible by both 3 and 5.

10. (d) 9026 is divisible by 2 but not by 4 [because the last two digits ~~are~~^{is} not divisible by 4]

11. 9540

The last two digits is divisible by 4, so 9540 is divisible by 4.

The ~~num~~ given number has 0 in its ones place, so it is divisible by 5.

The difference of the sum of ~~even~~^{digits} in even places and the sum of digits in odd places [(1+9)-(5+0)=0] is 0, so it is divisible by 11.

12.

Column 1
(number)

Column 2
(divisible by)

(a) 110

(b) 3035

(c) 1350

(i) 3

(ii) 5

(iii) 11

13.

(a) 2 1

(b) 31 2

(c) 399 0

(d) 188 1

(e) 1 2 3 4 2

14.

(a) 256 (4/8)

(b) 81 ~~(4/8)~~ 8

(c) 64

(d) 7 72

(2/4/6/8)

~~(1/2/3/4/5/6/7/8)~~

(2/4/6/8)

(2/4/6/8)

2
4
5
8