



Exercise 2F

Q1

Answer :

(c) 83479560

A number is divisible by 3 if the sum of its digits is divisible by 3.

a) Consider the number 24357806.

Sum of its digits = $2 + 4 + 3 + 5 + 7 + 8 + 0 + 6 = 35$, which is not divisible by 3.

So, 2357806 is not divisible by 3.

b) Consider the number 35769812.

Sum of its digits = $3 + 5 + 7 + 6 + 9 + 8 + 1 + 2 = 41$, which is not divisible by 3.

So, 35769812 is not divisible by 3.

c) Consider the number 83479560.

Sum of its digits = $8 + 3 + 4 + 7 + 9 + 5 + 6 + 0 = 42$, which is divisible by 3.

So, 2357806 is divisible by 3.

d) Consider the number 3336433.

Sum of its digits = $3 + 3 + 3 + 6 + 4 + 3 + 3 = 25$, which is not divisible by 3.

So, 3336433 is not divisible by 3.

Q2

Answer :

(a) 8576901

A number is divisible by 9 if the sum of its digits is divisible by 9.

a) Consider the number 8576901.

Sum of its digits = $8 + 5 + 7 + 6 + 9 + 0 + 1 = 36$, which is divisible by 9.

So, 8576901 is divisible by 9.

b) Consider the number 96345210.

Sum of its digits = $9 + 6 + 3 + 4 + 5 + 2 + 1 + 0 = 30$, which is not divisible by 9.

So, 96345210 is not divisible by 9.

c) Consider the number 67594310.

Sum of its digits = $6 + 7 + 5 + 9 + 4 + 3 + 1 + 0 = 35$, which is not divisible by 9.

So, 67594310 is not divisible by 9.

Q3

Answer :

(d) 87941032

A number is divisible by 4 if the number formed by its digits in the tens and ones places is divisible by 4.

(a) 78653234

Consider the number 78653234.

Here, the number formed by the tens and the ones digit is 34, which is not divisible by 4.

Therefore, 78653234 is not divisible by 4.

(b) 98765042

Consider the number 98765042.

Here, the number formed by the tens and the ones digit is 42, which is not divisible by 4.

Therefore, 98765042 is not divisible by 4.

(c) 24689602

Consider the number 24689602.

Here, the number formed by the tens and the ones digit is 02, which is not divisible by 4.

Therefore, 24689602 is not divisible by 4.

(d) 87941032

Consider the number 87941032.

Here, the number formed by the tens and ones digit is 32, which is divisible by 4.

Therefore, 87941032 is divisible by 4.

Q4

Answer :

(b) 37450176

A number is divisible by 8 if the number formed by its digits in hundreds, tens and ones places is divisible by 8.

(a) 96354142

Consider the number 96354142.

Here, the number formed by the digits in hundreds, tens and ones places is 142, which is clearly not divisible by 8.

Therefore, 96354142 is not divisible by 8.

(b) 37450176

Consider the number 37450176.

The number formed by the digits in hundreds, tens and ones places is 176, which is clearly divisible by 8.

Therefore, 37450176 is divisible by 8.

(c) 57064214

Consider the number 57064214.

Here, the number formed by the digits in hundreds, tens and ones places is 214, which is clearly not divisible by 8.

Therefore, 57064214 is not divisible by 8.

Q5

Answer :

(a) 8790432 and (c) 85492014

A number is divisible by 6, if it is divisible by both 2 and 3.

(a) 8790432

Consider the number 8790432.

The number in the ones digit is 2.

Therefore, 8790432 is divisible by 2.

Now, the sum of its digits ($8+7+9+0+2+3+2$) is 33. Since 33 is divisible by 3, we can say that 8790432 is also divisible by 3.

Since 8790432 is divisible by both 2 and 3, it is also divisible by 6.

(b) 98671402

Consider the number 98671402.

The number in the ones digit is 2.

Therefore, 98671402 is divisible by 2.

Now, the sum of its digits ($9+8+6+7+1+4+0+2$) is 37. Since 37 is not divisible by 3, we can say that 98671402 is also not divisible by 3.

Since 98671402 is not divisible by both 2 and 3, it is not divisible by 6.

(c) 85492014

Consider the number 85492014.

The number in the ones digit is 4.

Therefore, 85492014 is divisible by 2.

Now, the sum of its digits ($8+5+4+9+2+0+1+4$) is 33. Since 33 is divisible by 3, we can say that 85492014 is also divisible by 3.

Since 85492014 is divisible by both 2 and 3, it is also divisible by 6.

Q6

Answer :

(c) 22222222

A number is divisible by 11, if the difference of the sum of its digits in odd places and the sum of the digits in even places (starting from ones place) is either 0 or a multiple of 11.

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