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Class 6 *Mathematics* Chapter 3 Playing with Numbers
Exercise 3.3

∗ कंप्यूटराइज्ड नोट्स   ∗ फ्री स्टडी मटेरियल   ∗ न्यूनतम शिक्षण शुल्क   ∗ नियमित कक्षाये

Question 1: Using divisibility test, determine which of the following numbers are divisible by 2; by 3; by 4; by 5; by 6; by 8; by 9; by 10; by 11. (Say yes or no)

Answer:

Number	Divisible by								
	2	3	4	5	6	8	9	10	11
128	Yes	No	Yes	No	No	Yes	No	No	No
990	Yes	Yes	No	Yes	Yes	No	Yes	Yes	Yes
1586	Yes	No	No	No	No	No	No	No	No
275	No	No	No	Yes	No	No	No	No	Yes
6686	Yes	No	No	No	No	No	No	No	No
639210	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes
429714	Yes	Yes	No	No	Yes	No	Yes	No	No
2856	Yes	Yes	Yes	No	Yes	Yes	No	No	No
3060	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No
406839	No	Yes	No	No	No	no	No	No	No

Question 2: Using divisibility test, determine which of the following numbers are divisibly by 4; by 8:
(a) 572 (b) 726352 (c) 5500 (d) 6000 (e) 12159 (f) 14560 (g) 21084 (h) 31795072 (i) 1700 (j) 2150

Answer:

(a) 572 → Divisible by 4 as its last two digits are divisible by 4.
→ Not divisible by 8 as its last three digits are not divisible by 8.

(b) 726352 → Divisible by 4 as its last two digits are divisible by 4.
→ Divisible by 8 as its last three digits are divisible by 8.

(c) 5500 → Divisible by 4 as its last two digits are divisible by 4.
→ Not divisible by 8 as its last three digits are not divisible by 8.

(d) 6000 → Divisible by 4 as its last two digits are 0.
→ Divisible by 8 as its last three digits are 0.

(e) 12159 → Not divisible by 4 and 8 as it is an odd number.

(f) 14560 → Divisible by 4 as its last two digits are divisible by 4.
→ Divisible by 8 as its last three digits are divisible by 8.

(g) 21084 → Divisible by 4 as its last two digits are divisible by 4.
→ Not divisible by 8 as its last three digits are not divisible by 8.

(h) 31795072 → Divisible by 4 as its last two digits are divisible by 4.
→ Divisible by 8 as its last three digits are divisible by 8.

(i) 1700 → Divisible by 4 as its last two digits are 0.
→ Not divisible by 8 as its last three digits are not divisible by 8.

(j) 5500 → Not divisible by 4 as its last two digits are not divisible by 4.
→ Not divisible by 8 as its last three digits are not divisible by 8.

Question 3: Using divisibility test, determine which of the following numbers are divisible by 6:
(a) 297144 (b) 1258 (c) 4335 (d) 61233 (e) 901352 (f) 438750 (g) 1790184 (h) 12583 (i) 639210
(j) 17852

Answer:

(a) 297144 → Divisible by 2 as its units place is an even number.

→ Divisible by 3 as sum of its digits (= 27) is divisible by 3. Since the number is divisible by both 2 and 3, therefore, it is also divisible by 6.

(b) 1258 → Divisible by 2 as its units place is an even number.
→ Not divisible by 3 as sum of its digits (= 16) is not divisible by 3. Since the number is not divisible by both 2 and 3, therefore, it is not divisible by 6.

(c) 4335 → Not divisible by 2 as its units place is not an even number.
→ Divisible by 3 as sum of its digits (= 15) is divisible by 3.
Since the number is not divisible by both 2 and 3, therefore, it is not divisible by 6.

(d) 61233 → Not divisible by 2 as its units place is not an even number.
→ Divisible by 3 as sum of its digits (= 15) is divisible by 3.
Since the number is not divisible by both 2 and 3, therefore, it is not divisible by 6.

(e) 901352 → Divisible by 2 as its units place is an even number.

→ Not divisible by 3 as sum of its digits (= 20) is not divisible by 3. Since the number is not divisible by both 2 and 3, therefore, it is not divisible by 6.

(f) 438750 → Divisible by 2 as its units place is an even number.
→ Divisible by 3 as sum of its digits (= 27) is not divisible by 3. Since the number is divisible by both 2 and 3, therefore, it is divisible by 6.

(g) 1790184 → Divisible by 2 as its units place is an even number.
→ Divisible by 3 as sum of its digits (= 30) is not divisible by 3. Since the number is divisible by both 2 and 3, therefore, it is divisible by 6.

(h)12583 → Not divisible by 2 as its units place is not an even number.
→ Not divisible by 3 as sum of its digits (= 19) is not divisible by 3. Since the number is not divisible by both 2 and 3, therefore, it is not divisible by 6.

(I) 639210 → Divisible by 2 as its units place is an even number.
→ Divisible by 3 as sum of its digits (= 21) is not divisible by 3. Since the number is divisible by both 2 and 3, therefore, it is divisible by 6.

(j) 17852 → Divisible by 2 as its units place is an even number.
→ Not divisible by 3 as sum of its digits (= 23) is not divisible by 3. Since the number is not divisible by both 2 and 3, therefore, it is not divisible by 6.

Question 4: Using divisibility test, determine which of the following numbers are divisible by 11:
(a) 5445 (b) 10824 (c) 7138965 (d) 70169308 (e) 10000001 (f) 901153
Answer:
(a) 5445 → Sum of the digits at odd places = 4 + 5 = 9
→ Sum of the digits at even places = 4 + 5 = 9
→ Difference of both sums = 9 – 9 = 0
Since the difference is 0, therefore, the number is divisible by 11.

(b) 10824 → Sum of the digits at odd places = 4 + 8 +1 = 13
→ Sum of the digits at even places = 2 + 0 = 2
→ Difference of both sums = 13 – 2 = 11
Since the difference is 11, therefore, the number is divisible by 11.

(c) 7138965→ Sum of the digits at odd places = 5 + 9 + 3 + 7 = 24
→ Sum of the digits at even places = 6 + 8 + 1 = 15
→ Difference of both sums = 24 – 15 = 9
Since the difference is neither 0 nor 11, therefore, the number is not divisible by 11.

(d) 70169308 → 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 of both sums = 17 – 17 = 0

Since the difference is 0, therefore, the number is divisible by 11.

(e) 10000001 → Sum of the digits at odd places = 1 + 0 + 0 + 0 = 1
→ Sum of the digits at even places = 0 + 0 + 0 + 1 = 1
→ Difference of both sums = 1 – 1 = 0
Since the difference is 0, therefore, the number is divisible by 11.

(f) 901153 → Sum of the digits at odd places = 3 + 1 + 0 = 4
→ Sum of the digits at even places = 5 + 1 + 9 = 15
→ Difference of both sums = 15 – 4 = 11
Since the difference is 11, therefore, the number is divisible by 11.

Question 5: Write the smallest digit and the largest digit in the blanks space of each of the following numbers so that the number formed is divisively by 3:

(a) _____ 6724(b) 4765 _____ 2

Answer:

(a) We know that a number is divisible by 3 if the sum of all digits is divisible by 3.
Therefore, Smallest digit : 2 → 26724 = 2 + 6 + 7 + 2 + 4 = 21
Largest digit : 8 → 86724 = 8 + 6 + 7 + 2 + 4 = 27

(b) We know that a number is divisible by 3 if the sum of all digits is divisible by 3.
Therefore, Smallest digit : 0 → 476502 = 4 + 7 + 6 + 5 + 0 + 2 = 24
Largest digit : 9 → 476592 = 4 + 7 + 6 + 5 + 0 + 2 = 33

Question 6: Write the smallest digit and the largest digit in the blanks space of each of the following numbers so that the number formed is divisively by 11:
(a) 92 _____ 389 (b) 8 _____ 9484
Answer:
(a)We know that a number is divisible by 11 if the difference of the sum of the digits at odd places and that of even places should be either 0 or 11.
Therefore, 928389 → Odd places = 9 + 8 + 8 = 25
Even places = 2 + 3 + 9 = 14
Difference = 25 – 14 = 11

(b) We know that a number is divisible by 11 if the difference of the sum of the digits at odd places and that of even places should be either 0 or 11.
Therefore, 869484 → Odd places = 8 + 9 + 8 = 25
Even places = 6 + 4 + 4 = 14
Difference = 25 – 14 = 11

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