Chapter – 3

Patterns

Ex 3.1

Fill in the shapes

Question 1.

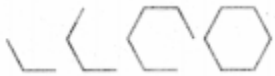
Answer:

Question 2.

Answer:

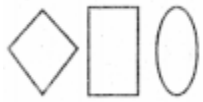
Question 3.

Answer:



Question 4.

Answer:



Question 5.

Answer:

Ex 3.2

Question 1.
Circle the multiples of 9 (by using casting out nine)
(a) 9443
(b) 1008
(c) 24689
(d) 23769
(e) 13476

Answer:
(a) 9443
= 9443
= 4 + 4 + 3 = 11
= 9 – 11
= 2 (no)

(b) 1008
= 1008

1 + 8 = 9
9 – 9 = 0 (multiple of 9)

(c) 24689
= 24689
= 2 + 4 + 6 + 8 = 20
20 = 2 + 0 = 2 (no)

(d) 23769
23769
7 + 2 = 9
6 + 3 = 9
9 – 9 = 0 (multiple of 9)

(e) 13476
= 13476
1 + 4 + 7 = 12
1 + 2 = 3 (no)

Question 2.
Circle the correct addition fact (by using casting out nine).
(a) 4355 + 5369 = 9724
(b) 7632 + 2213 = 9845
(c) 6023 + 3203 = 9220
(d) 2436 + 5315 = 7701

Answer:
(b) 7632 + 2213 = 9845
= 7632 + 2213 = 9845
0 + 8 = 8
8 = 8

Question 13.
Circle the correct subtraction fact (by using casting out nine).
(a) 7420 – 3625 = 3795
(b) 2362 – 632 = 1720
(c) 6732 – 4361= 2371
(d) 3264 – 1063 = 2200

Answer:
(a) 7420 – 3625 = 3795
7420 – 3625 = 3795
4 – 7 = 15
4 = 15 + 7
4 = 6 + 7
4 = 13
4 = 4

(c) 6732 – 4361= 2371
6732 – 4361= 2371
9 – 5 = 13
4 = 4

Ex 3.3

Question 1.
Circle the correct multiplication fact (by using method of casting out nine).
(a) 312 × 36 = 11232
(b) 723 × 24 = 17508
(c) 132 × 43 = 5676

Answer:
(c) 132 × 43 = 5676
132 × 43 = 5676
6 × 7 = 5 + 6 + 7 + 6
42 = 24
6 = 6

Question 2.
Circle the correct division fact (by using method of casting out nine).
(a) 728 ÷ 4 = 182
(b) 1580 ÷ 20 = 78
(c) 7785 ÷ 9 = 865

Answer:
(a) 728 ÷ 4 = 182
728 ÷ 4 = 182

8 ÷ 4 = 2
8 = 2 × 4
8 = 8

(b) 1580 ÷ 20 = 78
1 + 5 + 8 + 0 ÷ 2 + 0 = 7 = 8
14 ÷ 2 = 15
14 = 15 × 2 = 30
14 = 30
5 = 3

(c) 7785 ÷ 9 = 865
7 + 7 + 8 + 5 ÷ 0 = 8 + 6 + 5
27 ÷0 = 19
27 = 19 × 0
9 = 0
0 = 0

Ex 3.4

Fill in the blanks :

i. 90. 180, 270, _____, _____, _____,
ii. A9, B18, C27, 836, _____, _____, _____,

Answer:
i. 90. 180, 270, _____, _____, _____,
360, 450, 540.

ii. A9, B18, C27, 836, _____, _____, _____,
E45 F54, G63.

B. Circle the multiples of 9:
25, 27, 35, 36, 45, 46, 54, 55

Answer:

25, (27), 35, (36), (45), 46, (54), 55

C. Complete the following sequence:

Question 1.
125, 150, 175, _____, _____, _____,

Answer:
200, 225, 250

Question 2.
100, 400, 700. _____, _____, _____,

Answer:
1000, 1300, 1600

Question 3.

A100	C300	E50				

Answer:

A100	C300	E500	G700	I900	K1100

Question 4.

200	400	600			

Answer:

200	400	600	800	1000	1200

Complete the following sequence.

Question 1.
9 × 6 = 54
9 × 66 = 594
9 × 666 = 5994
9 × 6666 = 5 ____ 4
9 × 666666 = _____

Answer:
9 × 6666 = 59994
9 × 666666 =5999994

Question 2.
9 × 111 = 999
9 × 222 = 1998
9 × 333 = 2997
9 × 444 = _____
9 × 555 = _____
9 × 666 = _____

Answer:
9 × 444 = 3996
9 × 555 = 4995
9 × 666 = 5994.

E. Answer the following Questions:

Question 1.
The school bell rings once in an hour, to indicate that the session ends/next session begins. And for break, it will be 20 minutes. Shall we try to fill this up. Here is the time table.

Period 1	Period 2	Break	Period 3	Period 4	Break	Period 5	Period 6
9:00	10:00	11:00					2:40

Answer:

Period 1	Period 2	Break	Period 3	Period 4	Break	Period 5	Period 6
9:00	10:00	11:00	11:20	12:20	1:20	1:40	2:40

Question 2.
Imagine you are a traffic inspector. You are asked to design the traffic signal timings. Can you design it?

Here is the time table.

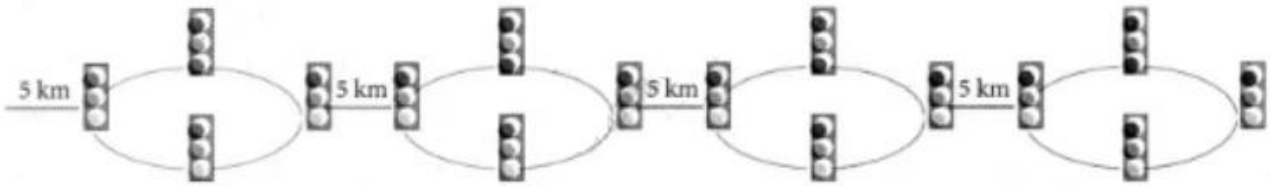
Red	Yellow/orange	Green	Red	Green
7:30 am				

Answer:

Red	Yellow/orange	Green	Red	Green
7:30 a.m	7:32 a.m	7:33 a.m	7:35 a.m	7:37 a.m

Question 3.
A city is planned in such a way that every 5km has a circle and has 4 signals around. So, can you guess where the signals and circle are there?
How many signals are needed for a 20 km distance?

Answer:



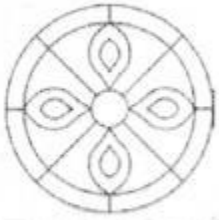
4 signals +4 signals + 4 signals + 4 signals = 16 signals
There are 16 signals are needed for a 20 km distance.

InText Questions

Activity (Text Book Page No. 40)

Colour the given picture	Complete the picture
	

Answer:

Colour the given picture	Complete the picture
	
Student self activity	

Activity (Text Book Page No. 41)

Identify the patterns in multiplication and division (multiples of 6).

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Answer:

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Activity (Text Book Page No. 42)

Make patterns based on the multiples of 9

multiple of 9	Product	Sum of all the digits of product
9 x 9	81	8 + 1 = 9
81 x 9	729	7 + 2 + 9 = 18 = 1 + 8 = 9
__ x 9		
__ x 9		
__ x 9		
__ x 9		

Answer:

Multiple of 9	Product	Sum of all the digits of product
9 × 9	81	8 + 1 = 9
81 × 9	729	7 + 2 + 9 = 18 = 1 + 8 = 9
10 × 9	90	0 + 9 = 9
11 × 9	99	9 + 9 = 18 = 1 + 8 = 9
30 × 9	270	2 + 7 + 6 = 9
110 × 9	990	9 + 9 + 0 = 18 = 1 + 8 = 9

Activity (Text Book Page No. 44)

Number	Reverse Number	Difference	Sum of the digits
92	29	92 – 29 = 63	6 + 3 = 9
14		– = 27	
–	38		
17			5 + 4 = 9

Answer:

Number	Reverse Number	Difference	Sum of the digits
92	29	92 - 29 = 63	6 + 3 = 9
14	41	41 - 14 = 27	2 + 7 = 9
83	38	83 - 38 = 45	4 + 5 = 9
17	71	71 - 17 = 54	5 + 4 = 9

Activity (Text Book Page No. 46)

Question 1.
× 200
3 → ____
2 → ____
4 → ____
5 → ____

Answer:
3 → 600
2 → 400
4 → 800
5 → 1000

Question 2.
× 3
60 → ____
200 → ____
30 → ____
500 → ____

Answer:
60 → 180
200 → 600
30 → 90
500 → 1500

Question 3.
× 10
7 → ____
60 → ____
6 → ____
100 → ____

Answer:
7 → 70
60 → 600

6 → 60
100 → 1000

Question 4.
× 9
20 → ____
400 → ____
30 → ____
500 → ____

Answer:
20 → 180
400 → 3600
30 → 270
500 → 4500

Activity 2 (Text Book Page No. 47)

Complete the following.
a. 54 ÷ 9 = 6
b. 540 ÷ 9 = 60
c. 5400 + 9 = _____
d. _____ ÷ 9 = 6000

Answer:
c. 5400 + 9 = _____
5400 + 9 = 600

Try This (Text Book Page No. 48)

Create magic squares by using,
1. Multiples of nine
2. Multiples of hundred

Answer:

1. Multiples of nine

18	81	36	
63	45	27	135
54	9	72	
135			

2. Multiples of hundred

200	900	400	
700	500	300	1500
600	100	800	
1500			