Chapter 3: Fun with Numbers

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Exercise 3.1 — Ginladi — Counting Beads

Q1 How many beads are there in the ginladi?

SOLUTION

Count all the beads on the ginladi. The ginladi track runs from 1 to 100. There are 100 beads in total. Answer: 100

Q2 There are some blank cards on the ginladi. Write the numbers on them by counting the number of beads.

SOLUTION

Look at each blank orange card on the ginladi. The cards sit at bead positions along the track. Count the beads up to each card and write that number on it. (This is a classroom hands-on activity — children count beads to the card's position and write the number.)

Q3 Make number cards for the following numbers and place them on your ginladi: 38, 44, 58, 65, 98.

SOLUTION

Write each number on a card. Place each card on the ginladi to show that many beads: 38, 44, 58, 65, 98.

Exercise 3.2 — Number Strip — Forward and Backward Steps

Q1 The butterfly moves _____ steps forward to reach the pink flower.

SOLUTION

Look at the number strip (ginladi track). The butterfly is sitting on 58. The pink flower is at 83. Count steps from 58 to 83: 83 − 58 = 25. The butterfly moves 25 steps forward to reach the pink flower. Answer: 25

Q2 The honey bee moves _____ steps forward to reach the red flower and _____ steps forward to reach the yellow flower.

SOLUTION

Look at the number strip. The honey bee is at 68. The red flower is at 83 and the yellow flower is at 98. Steps to red flower: 83 − 68 = 15. Steps from red to yellow: 98 − 83 = 15. The honey bee moves 15 steps forward to reach the red flower and 15 steps forward to reach the yellow flower. Answer: 15 steps to red flower, 15 steps to yellow flower

Q3 The squirrel jumps 2 steps backward, five steps forward and again 3 steps backward. It will reach at _____.

SOLUTION

The squirrel is at 68 on the number strip. Step 1: 2 steps backward → 68 − 2 = 66. Step 2: 5 steps forward → 66 + 5 = 71. Step 3: 3 steps backward → 71 − 3 = 68. The squirrel reaches 68. Answer: 68

Q4 The frog jumps 2 steps forward, seven steps backward and again 3 steps backward to reach _____.

SOLUTION

The frog is at 83 on the number strip. Step 1: 2 steps forward → 83 + 2 = 85. Step 2: 7 steps backward → 85 − 7 = 78. Step 3: 3 steps backward → 78 − 3 = 75. The frog reaches 75. Answer: 75

Exercise 3.3 — Guess My Place — Number Line

Q1 Three ants are sitting on a number line (between 20 and 80). Write the numbers for the black ant, red ant, and brown ant.

SOLUTION

Look at the number line from 20 to 80. The black ant is sitting on 30. The red ant is sitting on 50. The brown ant is sitting on 65. Answer: Black ant = 30, Red ant = 50, Brown ant = 65

Q2 Draw an ant on number 65 on the number line.

SOLUTION

Find 65 on the number line. It lies between 60 and 70, closer to 70. Draw an ant at that point.

Q3 Draw a sugar cube on number 79 on the number line.

SOLUTION

Find 79 on the number line. It lies between 70 and 80, very close to 80. Draw a sugar cube at that point.

Exercise 3.4 — Jumping Patterns — Skip Counting Forward

Q1 Complete the following pattern: 1, 4, 7, _____, _____, _____, _____

SOLUTION

Each number increases by 3.
7 + 3 = 10, 10 + 3 = 13, 13 + 3 = 16, 16 + 3 = 19
10, 13, 16, 19

Q2 Complete the following pattern: 40, 45, 50, _____, _____, _____, _____, _____

SOLUTION

Each number increases by 5.
50 + 5 = 55, 55 + 5 = 60, 60 + 5 = 65, 65 + 5 = 70, 70 + 5 = 75
55, 60, 65, 70, 75

Q3 Complete the following pattern: 50, 60, _____, _____, _____

SOLUTION

Each number increases by 10.
60 + 10 = 70, 70 + 10 = 80, 80 + 10 = 90
70, 80, 90

Exercise 3.5 — Let us Do — Skip Counting on Number Chart

Q1 On the number chart (1–100), use skip counting in two and draw circles on those numbers. Then use skip counting in five and draw triangles on those numbers.

SOLUTION

Skip counting in 2: circle 2, 4, 6, 8, …, 100 (all even numbers).
Skip counting in 5: draw triangle on 5, 10, 15, 20, …, 100.

Q2 Write down the numbers that are common to the skips in twos and fives.

SOLUTION

Numbers in both the 2-skip and 5-skip lists are multiples of both 2 and 5, i.e., multiples of 10.
10, 20, 30, 40, 50, 60, 70, 80, 90, 100

Q3 Write down the numbers that are common to the skips in twos, threes and fives.

SOLUTION

Numbers divisible by 2, 3, and 5 are multiples of 30.
$30 \times 1 = 30$, $30 \times 2 = 60$, $30 \times 3 = 90$
30, 60, 90

Q4 Write down the numbers common to the skips of fives and sevens.

SOLUTION

Numbers divisible by both 5 and 7 are multiples of 35.
$35 \times 1 = 35$, $35 \times 2 = 70$
35, 70

Q5 Jump and find: If you start from 10 and jump counting in tens, will you land on number 100? (Yes/No)

SOLUTION

Skip of 10 from 10: 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.
Yes, you will land on 100.
Yes

Q6 Jump and find: If you start at 5 and count in fives, will you jump on number 40? (Yes/No)

SOLUTION

Skip of 5 from 5: 5, 10, 15, 20, 25, 30, 35, 40.
Yes, 40 is in the list.
Yes

Q7 If you start from 0 and count in fives, will you jump on number 55? (Yes/No)

SOLUTION

Skip of 5 from 0: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55.
Yes, you will land on 55.
Yes

Q8 If you start from 4 and count in twos, will you jump on number 17? (Yes/No)

SOLUTION

Skip of 2 from 4: 4, 6, 8, 10, 12, 14, 16, 18, …
All numbers are even. 17 is odd, so it will never appear.
No

Q9 If you start from 13 and count in threes, will you jump on number 24? (Yes/No)

SOLUTION

Skip of 3 from 13: 13, 16, 19, 22, 25, 28, …
24 does not appear in the sequence — the sequence goes 22, 25, skipping over 24.
No

Exercise 3.6 — Let us Jump Backward — Backward Patterns

Q1 Complete the backward pattern: 40, 37, 34, _____, _____, _____

SOLUTION

Each number decreases by 3.
34 − 3 = 31, 31 − 3 = 28, 28 − 3 = 25
31, 28, 25

Q2 Complete the backward pattern: 70, 65, 60, _____, _____, _____

SOLUTION

Each number decreases by 5.
60 − 5 = 55, 55 − 5 = 50, 50 − 5 = 45
55, 50, 45

Q3 Complete the backward pattern: 100, 90, _____, _____, _____

SOLUTION

Each number decreases by 10.
90 − 10 = 80, 80 − 10 = 70, 70 − 10 = 60
80, 70, 60

Q4 Complete the backward pattern: 100, 80, _____, _____, _____

SOLUTION

Each number decreases by 20.
80 − 20 = 60, 60 − 20 = 40, 40 − 20 = 20
60, 40, 20

Exercise 3.7 — Let us Talk — Counting Reasoning

Q1 Rizwan is counting numbers from 20 onwards. Will he say the number 19 in his count? Explain why.

SOLUTION

Rizwan starts at 20 and counts forward: 20, 21, 22, …
He is going up, so he will never go back to 19.
No, he will not say 19.
No. Counting forward from 20 never reaches 19.

Q2 Chavi is counting numbers in twos from 10 onwards. Will she say 43? Explain why.

SOLUTION

Chavi counts: 10, 12, 14, 16, … — all even numbers.
43 is an odd number, so it will never appear.
No, she will not say 43.
No. Skip counting in twos from 10 gives only even numbers; 43 is odd.

Q3 Mala is counting backwards from 20. How many steps will it take to reach 0? Explain why.

SOLUTION

Mala counts: 20, 19, 18, 17, …, 1, 0.
She counts down 20 numbers before reaching 0.
It takes 20 steps.
20 steps

Q4 Viraaj is counting backwards in twos from 20. How many steps will it take to reach 0?

SOLUTION

Viraaj counts: 20, 18, 16, 14, 12, 10, 8, 6, 4, 2, 0.
That is 10 steps (each step subtracts 2).
10 steps

Exercise 3.8 — Patterns in Number Chart — Before, Diagonals, Number Window

Q1 On the number chart: what number comes just before 10? Just before 20? Just before 30? Just before 40?

SOLUTION

The number just before any number is one less.
Just before 10 → 9, just before 20 → 19, just before 30 → 29, just before 40 → 39.
9, 19, 29, 39

Q2 Do you see a pattern in the 'just before' numbers? Shade them and write the pattern for other numbers.

SOLUTION

The numbers are 9, 19, 29, 39, 49, 59, 69, 79, 89, 99.
Each ends in 9 and increases by 10.
9, 19, 29, 39, 49, 59, 69, 79, 89, 99

Q3 Look at the numbers coloured green in the number chart. The first three are 1, 12, 23. Write the remaining green numbers and describe the pattern.

SOLUTION

Each green number is 11 more than the previous one (diagonal pattern).
23 + 11 = 34, 34 + 11 = 45, 45 + 11 = 56, 56 + 11 = 67, 67 + 11 = 78, 78 + 11 = 89, 89 + 11 = 100
34, 45, 56, 67, 78, 89, 100 (each number is 11 more than the previous)

Q4 If the centre of Lakshanya's number window is placed on 28, which number will be on the top?

SOLUTION

In a 10-column number chart, the number directly above any number is 10 less.
28 − 10 = 18
18

Q5 If the centre of the number window is on 28, which number will be below it?

SOLUTION

The number directly below is 10 more.
28 + 10 = 38
38

Q6 If the centre of the number window is on 28, which number will be on its right?

SOLUTION

The number to the right is 1 more.
28 + 1 = 29
29

Q7 If the centre of the number window is on 28, which number will be on its left?

SOLUTION

The number to the left is 1 less.
28 − 1 = 27
27

Q8 Use the number window for centre 53. Find the numbers on the top, bottom, right, and left.

SOLUTION

Top: 53 − 10 = 43
Bottom: 53 + 10 = 63
Right: 53 + 1 = 54
Left: 53 − 1 = 52
Top: 43, Bottom: 63, Right: 54, Left: 52

Q9 Use the number window for centre 26. Find the numbers on the top, bottom, right, and left.

SOLUTION

Top: 26 − 10 = 16
Bottom: 26 + 10 = 36
Right: 26 + 1 = 27
Left: 26 − 1 = 25
Top: 16, Bottom: 36, Right: 27, Left: 25

Q10 Use the number window for centre 74. Find the numbers on the top, bottom, right, and left.

SOLUTION

Top: 74 − 10 = 64
Bottom: 74 + 10 = 84
Right: 74 + 1 = 75
Left: 74 − 1 = 73
Top: 64, Bottom: 84, Right: 75, Left: 73

Q11 Based on the number grid, fill in the missing numbers around 57.

SOLUTION

Above 57: 57 − 10 = 47
Below 57: 57 + 10 = 67
Left: 56, Right: 58
Above: 47, Below: 67, Left: 56, Right: 58

Q12 Based on the number grid, fill in the missing numbers around 69.

SOLUTION

Above 69: 69 − 10 = 59
Below 69: 69 + 10 = 79
Left: 68, Right: 70
Above: 59, Below: 79, Left: 68, Right: 70

Exercise 3.9 — Exploring Patterns — Growing Shapes

Q1 Observe how the number of blocks are increasing: 1, 3, 6, … Extend the pattern.

SOLUTION

The difference increases by 1 each time: +2, +3, +4, +5, …
6 + 4 = 10, 10 + 5 = 15
1, 3, 6, 10, 15 (triangular numbers)

Q2 Observe how the blocks are arranged in squares: 1, 4, 9, … Extend the pattern.

SOLUTION

These are square numbers: 1×1, 2×2, 3×3, …
Next: 4×4 = 16, 5×5 = 25
1, 4, 9, 16, 25 (square numbers)

Q3 Extend the pattern: 5, 8, _____, _____

SOLUTION

The pattern increases by 3 each time.
8 + 3 = 11, 11 + 3 = 14
11, 14