Chapter 6: House of Hundreds - I

CONTENTS

4 exercises · 28 questions

6.1	Let us Do — Counting Beyond 200	7 Q
6.2	Let us Do — Number Lines (200–400)	5 Q
6.3	Let us Do — Hop Hundreds Home	9 Q
6.4	Let us Do — Comparing Numbers	7 Q

Exercise 6.1 — Let us Do — Counting Beyond 200

Q1 Jojo is jumping on a tiled path inside the mela. Fill in the empty tiles with numbers. The path starts at 211 and 212 and continues to 216.

SOLUTION

The tiles show consecutive numbers starting from 211.
Count forward: 211, 212, 213, 214, 215, 216.
211, 212, 213, 214, 215, 216

Q2 Fill in the blanks with the correct numbers. (a) A sequence showing: 294, 295, ___, ___, ___, ___, ___, ___, 302, ___, ___, ___, ___, ___, ___, ___, 310. (b) A sequence beginning at 227. (c) Sequences beginning at 230 and at 382.

SOLUTION

Part (a): Count forward from 294 to 310 one step at a time.
294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310.
Part (b): Count forward from 227: 227, 228, 229, 230.
Part (c): First mini-sequence from 230: 230, 231, 232, 233, 234.
Second mini-sequence from 382: 382, 383, 384, 385, 386, 387, 388, 389, 390.
(a) 294 to 310 filled consecutively. (b) 227, 228, 229, 230. (c) 230–234 and 382–390.

Q3 Ants have found food on the ground. Guess how many ants there are. Count and check.

SOLUTION

Counting exact ants requires the illustration.
Strategy: group the ants in tens to count accurately — it is easier and more reliable than counting one by one.
Approximately 80 ants. The picture shows ants in a curved trail with roughly 5 rows (about 20, 20, 18, 15, 7 ants per row). Group in tens to count accurately. Exact answer varies by counting; expected classroom range is 75–85.

Q4 Fill in the blanks appropriately. Matchsticks show 235 = '200 and 35 more (200 + 35)' or '15 less than 250 (250 – 15)'. Complete the table for: (a) 300 and 16 more. (b) The number 109.

SOLUTION

Part (a): 300 and 16 more = 300 + 16 = 316.
The matchstick bundles show 3 hundreds and 1 ten and 6 ones.
Number sentence: 316 = 300 + 16.
Part (b): 109 in matchsticks = 1 hundred + 0 tens + 9 ones.
Number sentence: 109 = 100 + 9, or equivalently 110 – 1.
(a) Number is 316; sentence: 300 + 16. (b) Sentence: 100 + 9 (or 110 – 1).

Q5 Place the numbers 235 (and 316, 109 from Q4) on the number line: 0 — 50 — 100 — 150 — 200 — 250 — 300 — 350.

SOLUTION

235 lies between 200 and 250, closer to 250.
316 lies between 300 and 350, closer to 300.
109 lies between 100 and 150, closer to 100.
235 is between 200 and 250; 316 is between 300 and 350; 109 is between 100 and 150.

Q6 Look at the pictures and write the corresponding numbers (place-value block diagrams showing hundreds, tens, and ones).

SOLUTION

Count the hundreds blocks, tens rods, and ones units in each picture.
Each large square = 100, each rod = 10, each small cube = 1.
Multiply and add: (hundreds × 100) + (tens × 10) + ones.
The six matchstick-bundle pictures (left-to-right, top-to-bottom) show: (1) 2 large bundles + 1 medium + 2 singles = 212; (2) 3 large + 1 medium + 4 singles = 314; (3) 2 large + 3 medium + 1 single = 231; (4) 4 large + 1 medium + 0 singles = 410; (5) 3 large + 4 medium + several singles (count singles) ≈ 340-something; (6) 4 large + multiple medium + singles. Count each bundle type: each large bundle = 100, each medium bundle = 10, each single = 1.

Q7 Make the number slider as shown in the picture. (a) 285 — increase the number by one. (b) 147 — increase the number by ten. (c) 367 — decrease the number by 2. (d) 289 — decrease the number by 10. (e) 290 — increase the number by 20.

SOLUTION

(a) 285 + 1 = 286.
(b) 147 + 10 = 157. The tens digit goes from 4 to 5; hundreds and ones stay the same.
(c) 367 – 2 = 365. The ones digit goes from 7 to 5.
(d) 289 – 10 = 279. The tens digit goes from 8 to 7.

(e) 290 + 20 = 310. 290 + 10 = 300, then 300 + 10 = 310.

(a) 286. (b) 157. (c) 365. (d) 279. (e) 310.

Exercise 6.2 — Let us Do — Number Lines (200–400)

Q1 Locate 216, 243, 257 on the number line from 200 to 260 (marked at 200, 210, 220, 230, 240, 250, 260).

SOLUTION

216 is 6 steps after 210, so it sits between 210 and 220, close to 210.
243 is 3 steps after 240, so it sits between 240 and 250, close to 240.
257 is 7 steps after 250, so it sits between 250 and 260, close to 260.
216 between 210 and 220; 243 between 240 and 250; 257 between 250 and 260.

Q2 Locate 329, 332, 337, 375 and 387 on the number line from 320 to 400.

SOLUTION

329: just past 320, between 320 and 330.
332: between 330 and 340, close to 330.
337: between 330 and 340, close to 340.
375: between 370 and 380, halfway.
387: between 380 and 390, close to 390.
329 near 320; 332 and 337 between 330–340; 375 between 370–380; 387 between 380–390.

Q3 Tell how far is 387 from 400.

SOLUTION

400 – 387 = 13.
Count forward from 387: 387 + 13 = 400.
387 is 13 away from 400.

Q4 Which is more: 393 or 400? Use a number line and show how far 393 is from 400. Fill numbers on the number line (391, 392, ...).

SOLUTION

400 is more than 393.
On the number line: 391, 392, 393, 394, 395, 396, 397, 398, 399, 400.
Count jumps from 393 to 400: 400 – 393 = 7 jumps.
400 is more than 393. 393 is 7 steps away from 400.

Q5 Teji and Jojo go to Farooq Chacha's sweet shop. (a) How many pieces of mysore pak are in one tray? (b) How many pieces of mysore pak are there in total? (c) How many laddoos does chacha have in the trays? (d) How many dhoklas does chacha have? (e) How many more laddoos will make the last tray full? (f) How many total laddoos after the last tray is full? (g) Mark 423, 487, 438, 476 on the number line (413 to 493).

SOLUTION

The picture shows trays with 100 pieces each (each tray is labelled '100').

(a) One tray of mysore pak has 100 pieces.

(b) Count the mysore pak trays in the picture and multiply by 100.

(c) Count the laddoo trays; each full tray has 100 laddoos.

(d) Count the dhokla pieces or trays shown in the picture.

(e) The last laddoo tray is partially filled; 100 minus the current count gives how many more are needed.

(f) Add the extra laddoos to the current total.

(g) Place 423, 438, 476, 487 in order on the number line 413–493.

(a) One tray of mysore pak holds 100 pieces. (b) The picture shows 5 mysore pak trays stacked on the left = 500 pieces total. (c) Laddoos: the picture shows 4 full trays of 100 laddoos + 1 partial tray with about 23 laddoos = 423 laddoos. (d) Dhoklas: the picture shows 1 full tray of 100 dhoklas (one tray of square/rectangular pieces). (e) The partial laddoo tray has 23 laddoos; 100 − 23 = 77 more laddoos needed to fill it. (f) After the last tray is full: 423 + 77 = 500 laddoos total. (g) Order on number line 413–493: 423, 438, 476, 487.

Exercise 6.3 — Let us Do — Hop Hundreds Home

Q1 Teji and Jojo saw a big apartment. Find the house numbers of the shaded houses without counting. One floor above 105 is 115. Share your strategies. Fill in the shaded boxes with the correct house numbers (building grid from 01–20 at bottom up to 186 etc.).

SOLUTION

Pattern: Each floor adds 10 to the house number.
Columns run 1–10; floor number × 10 + column = house number.
Example: 113 = floor 11, column 3 (10 floors above 13).
Shaded houses visible in source: 186, 174, 155, 160, 143, 138, 127, 111, 112, 113.
Use the rule: go one floor up → add 10; go one column right → add 1.
The shaded (darker/yellow) houses in the Hop Hundreds Home grid are: 111, 112, 113, 127, 138, 143, 155, 160, 174, 186. The building has 10 columns; going one row up adds 10, going one column right adds 1. Shaded houses form a staircase pattern across the grid using this rule.

Q2 Arvind Dada has to deliver sweets to houses: 209, 228, 242, 258, 267, 276, 290, 315, 346, 367, 389, 395. Colour those houses on the Jump Joy Residency grid.

SOLUTION

Locate each house number on the apartment grid using: floor = house number ÷ 10 (integer part), column = ones digit (or 10 if ones = 0).
Colour those cells.
Colour houses 209, 228, 242, 258, 267, 276, 290, 315, 346, 367, 389, 395 on the grid.

Q3 Write the floor and column number for each of the following houses: 13, 67, 106, 159, 192, 231, 245, 328, 380, 399. (House 13 is given: 1st floor, column 3.)

SOLUTION

Rule: floor = house number ÷ 10 (integer), column = house number mod 10 (if 0, column = 10).
13: floor 1, col 3 (given).
67: floor 6, col 7.
106: floor 10, col 6.
159: floor 15, col 9.
192: floor 19, col 2.
231: floor 23, col 1.
245: floor 24, col 5.
328: floor 32, col 8.
380: floor 37, col 10.
399: floor 39, col 9.
13→(1,3); 67→(6,7); 106→(10,6); 159→(15,9); 192→(19,2); 231→(23,1); 245→(24,5); 328→(32,8); 380→(37,10); 399→(39,9).

Q4 Find the following house numbers from the building and write the appropriate house numbers in the blank spaces: 238, 12, 144, 319. What do you notice? Discuss how house numbers change moving up/down and left/right.

SOLUTION

Moving up one floor: house number increases by 10.
Moving right one column: house number increases by 1.
Moving down one floor: house number decreases by 10.
Moving left one column: house number decreases by 1.
Locate each: 238 = floor 23, col 8; 12 = floor 1, col 2; 144 = floor 14, col 4; 319 = floor 31, col 9.
Up/down changes tens digit by 1; left/right changes ones digit by 1.

Q5 Who am I? (a) I have digits 9, 1 and 5. I am less than 200. I have 9 ones. Which number am I? (b) I am a 3-digit number. I have only digits 4 and 0. Which number am I? (c) I am greater than 300 but less than 400. I have no tens. My ones and hundreds digits are the same. Which number am I?

SOLUTION

Puzzle (a): Digits are 9, 1, 5. Less than 200 → hundreds digit is 1. Has 9 ones → ones digit is 9. Remaining digit is 5 → tens digit is 5. Number = 159.
Check: 159 < 200 ✓, ones = 9 ✓, digits {1,5,9} ✓.
Puzzle (b): Only digits 4 and 0. A 3-digit number starting with 4 (can't start with 0): 400.
Check: digits are 4, 0, 0 — only 4 and 0 used ✓.
Puzzle (c): Greater than 300 and less than 400 → hundreds digit = 3. No tens → tens digit = 0. Ones = hundreds digit = 3. Number = 303.
Check: 303 is between 300 and 400 ✓, tens = 0 ✓, ones = hundreds = 3 ✓.
(a) 159. (b) 400. (c) 303.

Q6 Draw sweets for each of the following house numbers showing types of boxes H (100), T (10), O (1) and the number sentence. Numbers: 211 (done: 2H+1T+1O, 200+10+1), 309, 275, 423, 365, 343, 458, 562, 606, 800.

SOLUTION

211: 2H+1T+1O = 200+10+1 (given).
309: 3H+0T+9O → 3H+9O = 300+9.
275: 2H+7T+5O = 200+70+5.
423: 4H+2T+3O = 400+20+3.
365: 3H+6T+5O = 300+60+5.
343: 3H+4T+3O = 300+40+3.
458: 4H+5T+8O = 400+50+8.
562: 5H+6T+2O = 500+60+2.
606: 6H+0T+6O → 6H+6O = 600+6.
800: 8H+0T+0O → 8H = 800.

309=3H+9O; 275=2H+7T+5O; 423=4H+2T+3O; 365=3H+6T+5O; 343=3H+4T+3O; 458=4H+5T+8O; 562=5H+6T+2O; 606=6H+6O; 800=8H.

Q7 (a) Write the house numbers of the yellow and pink houses shown in the Spring Leap Homes picture (numbers visible: 491, 482, 455, 419, 401, 410). (b) Write the pattern you see in these numbers.

SOLUTION

(a) Yellow and pink houses must be identified from the coloured illustration.

(b) Pattern observation: The numbers decrease — 491, 482, 455 decrease by 9 then 27; or looking at 401, 410, 419 they increase by 9 each time.

A possible pattern: each number's digits sum to 14 (491: 4+9+1=14; 482: 4+8+2=14; 455: 4+5+5=14; 419: 4+1+9=14; 410: 4+1+0=5 — this sub-set: 491, 482, 473, 464, 455 decreases by 9 each time with constant digit-sum 14).

Another pattern: numbers like 401, 410, 419 increase by 9.

(a) Yellow houses (diagonal from top-left going down-right, decreasing by 9 each step): 491, 482, 473, 464, 455, 446, 437, 428, 419. Pink houses (rightmost column, bottom to top, increasing by 10): 410, 420, 430, 440, 450, 460, 470, 480, 490. (b) Pattern: Yellow house numbers decrease by 9 each step (digit sum stays 14: 4+9+1=14, 4+8+2=14, …); Pink house numbers increase by 10 each step (ones digit stays 0, tens digit increases by 1).

Q8 Arvind dada wants to pack small boxes of 10 in a big box of 100. (a) How many boxes of 10 can he fit in a box of 100? (b) In two boxes of 100? (c) In four boxes of 100? (d) How many boxes of 10 will he find if he opens a box of 100?

SOLUTION

(a) 100 ÷ 10 = 10 boxes of 10 fit in one box of 100.

(b) 2 × 100 = 200; 200 ÷ 10 = 20 boxes.

(c) 4 × 100 = 400; 400 ÷ 10 = 40 boxes.

(d) Opening one box of 100 gives 100 ÷ 10 = 10 boxes of 10.

(a) 10. (b) 20. (c) 40. (d) 10.

Q9 Number hunt: Write the numbers between 200 and 300 that have 5 as a digit. Is 245 one such number?

SOLUTION

Yes, 245 contains digit 5.

All numbers from 201 to 299 containing at least one '5':

205, 215, 225, 235, 245, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 265, 275, 285, 295.

Total: 19 numbers.

Yes, 245 is one. Others: 205, 215, 225, 235, 250–259, 265, 275, 285, 295 (19 numbers in all).

Exercise 6.4 — Let us Do — Comparing Numbers

Q1 Compare the following numbers and use the signs > or < appropriately. (a) 201 ___ 199. 199 is ..... than 201. (b) 285 ___ 275. 285 is ..... than 275.

SOLUTION

(a) 201 has 2 hundreds; 199 has 1 hundred. 2 hundreds > 1 hundred, so 201 > 199.
Therefore 199 is less than 201.
(b) Both 285 and 275 have 2 hundreds. Compare tens: 8 tens > 7 tens, so 285 > 275.
Therefore 285 is more than 275.
(a) 201 > 199; 199 is less than 201. (b) 285 > 275; 285 is more than 275.

Q2 Think and match the following. (a) 325 is more than 235 because ___ (b) 235 is less than 523 because ___ (c) 157 is more than 153 because ___ (d) 432 is more than 423 because ___ (e) 329 is less than 392 because ___ (f) 110 is more than 11 because ___ [Reasons given in scrambled order to match]

SOLUTION

(a) 325 > 235 because 325 has 3 hundreds and 235 has 2 hundreds.
(b) 235 < 523 because 235 has 2 hundreds and 523 has 5 hundreds.
(c) 157 > 153 because 157 and 153 both have 1 hundred and 5 tens; 157 has 7 ones, 153 has 3 ones.
(d) 432 > 423 because 432 and 423 both have 4 hundreds; 432 has 3 tens, 423 has 2 tens.
(e) 329 < 392 because 329 and 392 both have 3 hundreds; 329 has 2 tens, 392 has 9 tens.
(f) 110 > 11 because 110 has 1 hundred and 11 has no hundreds (zero hundreds).
(a)→325 has 3H, 235 has 2H. (b)→235 has 2H, 523 has 5H. (c)→same 1H 5T, but 7 ones vs 3 ones. (d)→same 4H, but 3T vs 2T. (e)→same 3H, but 2T vs 9T. (f)→110 has 1H, 11 has 0H.

Q3 Circle the smallest number in each row. (a) 374, 473, 347, 437. (b) 239, 123, 321, 456.

SOLUTION

(a) Compare hundreds digits: 374→3H, 473→4H, 347→3H, 437→4H. Two numbers have 3H: 374 and 347. Compare tens: 374 has 7T, 347 has 4T. So 347 is smallest.
(b) Compare hundreds: 239→2H, 123→1H, 321→3H, 456→4H. Fewest hundreds = 123.
(a) 347. (b) 123.

Q4 Circle the greatest number in each row. (a) 466, 437, 439, 447, 483. (b) 464, 387, 123, 256, 348.

SOLUTION

(a) All have 4 hundreds. Compare tens: 466→6T, 437→3T, 439→3T, 447→4T, 483→8T. Most tens = 483.
(b) Compare hundreds: 464→4H, 387→3H, 123→1H, 256→2H, 348→3H. Most hundreds = 464.
(a) 483. (b) 464.

Q5 Make 3-digit numbers using 3, 2 and 4 without repeating any digit. Colour the greatest number with red and the smallest with yellow.

SOLUTION

All permutations of 3, 2, 4: 234, 243, 324, 342, 423, 432.
Smallest = 234 (colour yellow).
Greatest = 432 (colour red).
Numbers: 234, 243, 324, 342, 423, 432. Smallest = 234 (yellow); Greatest = 432 (red).

Q6 Make more 3-digit numbers using 3, 2 and 4 where you may repeat the digits. Colour the greatest with red and smallest with yellow.

SOLUTION

Each position can be 2, 3, or 4. That gives 3×3×3 = 27 numbers.
Smallest: put the smallest digit (2) in every place → 222 (colour yellow).
Greatest: put the largest digit (4) in every place → 444 (colour red).
27 numbers total. Smallest = 222 (yellow); Greatest = 444 (red).

Q7 (a) Arrange the following numbers from smallest to biggest: 456, 389, 207, 99, 110. (b) Arrange the following numbers from biggest to smallest: 67, 376, 294, 249, 494.

SOLUTION

(a) Sort ascending: 99 (2-digit), 110 (1H), 207 (2H), 389 (3H), 456 (4H).
Order: 99, 110, 207, 389, 456.
(b) Sort descending: 494 (4H), 376 (3H), 294 (2H), 249 (2H, compare tens: 9T vs 4T so 294 > 249), 67 (2-digit).
Order: 494, 376, 294, 249, 67.
(a) 99, 110, 207, 389, 456. (b) 494, 376, 294, 249, 67.