Chapter 5: Far and Near

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Exercise 5.1 — Let Us Find — Units for measuring quantities (p. 57)

Q1 Identify the appropriate units for measuring each of the following.
(a) Height of India Gate
(b) Length of a handkerchief
(c) Depth of a well
(d) Length of a mobile phone
(e) Length of an elephant's trunk
(f) Distance between two buttons on a shirt

SOLUTION

Choose metre (m) for large things and centimetre (cm) for small things.

(a) Height of India Gate: 42 m (a very tall structure — metres make sense)

(b) Length of a handkerchief: 40 cm (small cloth — centimetres make sense)
(c) Depth of a well: 50 m (a deep hole — metres make sense)
(d) Length of a mobile phone: 13 cm (a small device — centimetres make sense)
(e) Length of an elephant's trunk: 2 m (a long trunk — metres make sense)
(f) Distance between two buttons on a shirt: 5 cm (a short gap — centimetres make sense)

Answer: (a) 42 m (b) 40 cm (c) 50 m (d) 13 cm (e) 2 m (f) 5 cm

Exercise 5.2 — Different Units but Same Measure — Matching saris/stoles on a double number line (p.

Q1 Shikha and Sonu are measuring lengths of saris and stoles. The double number line shows cm on top (100 cm, 200 cm, 400 cm, 500 cm, 700 cm) and metres below (1 m, 2 m, ___ m, ___ m, ___ m). Fill in the blanks on the number line and match each measurement on the left with the same length on the right.
Left side: 204 cm, 540 cm, 750 cm, 240 cm, 404 cm
Right side: 5 metre 40 cm, 2 metre 204 cm, 2 metre 4 cm, 2 metre 40 cm, 6 metre 150 cm

SOLUTION

First fill the number line blanks.
100 cm = 1 m, so multiply cm by (1/100) to get m.
400 cm = 4 m; 500 cm = 5 m; 700 cm = 7 m.
Number line (top cm / bottom m): 100/1m, 200/2m, 400/4m, 500/5m, 700/7m.

Now convert each measurement to cm and match:
204 cm = 200 cm + 4 cm = 2 m 4 cm -> matches '2 metre 4 cm'
540 cm = 500 cm + 40 cm = 5 m 40 cm -> matches '5 metre 40 cm'
750 cm = 600 cm + 150 cm = 6 m 150 cm -> matches '6 metre 150 cm'
240 cm = 200 cm + 40 cm = 2 m 40 cm -> matches '2 metre 40 cm'
404 cm = 200 cm + 204 cm = 2 m 204 cm -> matches '2 metre 204 cm'

Answer: Number line blanks: 4 m, 5 m, 7 m. Matches: 204 cm = 2 m 4 cm; 540 cm = 5 m 40 cm; 750 cm = 6 m 150 cm; 240 cm = 2 m 40 cm; 404 cm = 2 m 204 cm.

Exercise 5.3 — Let Us Compare — Comparing lengths using <, =, > and world's tallest statues (p. 58)

Q1 Ritika is comparing the lengths of different rods. Compare them using <, =, > signs.
(a) 456 cm ____ 5 m
(b) 55 cm + 200 cm ____ 200 cm + 54 cm
(c) 6 m 5 cm ___ 6 m 50 cm
(d) 2 m 150 cm ___ 3 m 50 cm
(e) 238 cm ____ 138 cm + 1 m

SOLUTION

(a) Convert 5 m to cm: 5 x 100 = 500 cm.
456 cm vs 500 cm -> 456 < 500.

(b) Left: 55 + 200 = 255 cm. Right: 200 + 54 = 254 cm.
255 > 254.

(c) 6 m 5 cm = 605 cm. 6 m 50 cm = 650 cm.
605 < 650.

(d) 2 m 150 cm = 200 + 150 = 350 cm. 3 m 50 cm = 300 + 50 = 350 cm.
350 = 350.

(e) Left: 238 cm. Right: 138 cm + 1 m = 138 + 100 = 238 cm.
238 = 238.

Answer: (a) 456 cm < 5 m (b) 55 cm + 200 cm > 200 cm + 54 cm (c) 6 m 5 cm < 6 m 50 cm (d) 2 m 150 cm = 3 m 50 cm (e) 238 cm = 138 cm + 1 m

Q2 World's tallest statues (heights given in the picture):
Statue of Unity, India — 182 m
Spring Temple Buddha, China — 128 m
Guanyin of Nanshan, China — 108 m
The Motherland Calls, Russia — 91 m
Statue of Liberty, USA — 93 m
Christ the Redeemer, Brazil — 38 m

(a) What is the difference between the height of the tallest statue in the world and the Statue of Liberty?
(b) Identify the statues whose heights have the least difference.
(c) Identify the statues whose heights have the largest difference.
(d) The height of which statue will be equal to the height of the Statue of Unity, if it is doubled?

SOLUTION

The tallest statue is the Statue of Unity at 182 m.

(a) Difference = 182 m - 93 m = 89 m.

(b) Find the pair with the smallest difference.

Motherland Calls (91 m) and Statue of Liberty (93 m): 93 - 91 = 2 m.
This is the smallest difference among all pairs.
The Motherland Calls and the Statue of Liberty have the least difference (2 m).

(c) Find the pair with the largest difference.
Statue of Unity (182 m) and Christ the Redeemer (38 m): 182 - 38 = 144 m.
The Statue of Unity and Christ the Redeemer have the largest difference (144 m).

(d) We need a statue whose height x 2 = 182 m.
x = 182 / 2 = 91 m.
The Motherland Calls, Russia is 91 m.
If its height is doubled: 91 x 2 = 182 m = height of Statue of Unity.

Answer: (a) 89 m (b) The Motherland Calls (91 m) and Statue of Liberty (93 m) — difference is only 2 m (c) Statue of Unity (182 m) and Christ the Redeemer (38 m) — difference is 144 m (d) The Motherland Calls, Russia (91 m)

Exercise 5.4 — Let Us Do — Measuring distances in school playground (p. 59)

Q1 Measure 100 m and 200 m on your school playground using a Long Tape. Mark these points and draw a straight line. Walk on the lines and count your steps. Use the steps-to-distance relationship to find distances for at least 3 locations around you.
(a) Identify and write the locations that are the nearest and the farthest from your home.
(b) Write the distances obtained above in increasing order.
(c) Name a location that is equal to or more than 1,000 m from your home.

SOLUTION

This is a hands-on activity. Here is a model answer to guide you.

Step 1: Measure 100 m and 200 m on the playground using a Long Tape.
Step 2: Walk 100 m and count your steps. For example, 100 m = 130 steps.
So 1 step = 100 / 130 metres (approx). Use this to estimate other distances.

(a) Example answers:
Nearest location: My neighbour's house (about 50 m away).
Farthest location: The market (about 1,200 m away).

(b) Write in increasing order: e.g. 50 m, 300 m, 800 m, 1,200 m.

(c) Example: The market (about 1,200 m from my home) is more than 1,000 m away.

Answer: Activity-based. Model: measure 100 m and count steps to find your step length. Use it to estimate distances. Example — nearest: neighbour's house (~50 m); farthest: market (~1,200 m). 1,200 m > 1,000 m.

Exercise 5.5 — Let Us Explore — Ropes needed to make 1 km (p. 59)

Q1 1,000 m = 1 km. Fill in the table: how many ropes of each length are needed to make 1 km?
Length of rope: 1,000 m, 100 m, 10 m, 200 m, 500 m, 250 m

SOLUTION

1 km = 1,000 m. Divide 1,000 by the rope length to find the number of ropes needed.

1,000 m rope: 1,000 / 1,000 = 1 rope
100 m rope: 1,000 / 100 = 10 ropes
10 m rope: 1,000 / 10 = 100 ropes
200 m rope: 1,000 / 200 = 5 ropes
500 m rope: 1,000 / 500 = 2 ropes
250 m rope: 1,000 / 250 = 4 ropes

Answer: 1,000 m: 1 rope | 100 m: 10 ropes | 10 m: 100 ropes | 200 m: 5 ropes | 500 m: 2 ropes | 250 m: 4 ropes

Exercise 5.6 — Kilometre Race — Arrangements for a 3 km race (p. 60)

Q1 Sheena and Jennifer are helping to organise a 3-km race. Water stations are to be arranged after every 500 m. How many water stations must be set up? At what positions from the starting point will these water stations be placed?

SOLUTION

Total race = 3 km = 3,000 m.
Water station every 500 m.
Number of stations = 3,000 / 500 = 6 stations.
Positions from start: 500 m, 1,000 m, 1,500 m, 2,000 m, 2,500 m, 3,000 m (finish line).

Answer: 6 water stations, at 500 m, 1,000 m, 1,500 m, 2,000 m, 2,500 m, and 3,000 m from the starting point.

Q2 Children need to stand at an interval of 300 m to direct the runners. How many children are needed? At what positions from the starting point will the children be standing?

SOLUTION

Total race = 3,000 m. Children at every 300 m.
Number of children = 3,000 / 300 = 10 children.
Positions: 300 m, 600 m, 900 m, 1,200 m, 1,500 m, 1,800 m, 2,100 m, 2,400 m, 2,700 m, 3,000 m.

Answer: 10 children, at positions 300 m, 600 m, 900 m, 1,200 m, 1,500 m, 1,800 m, 2,100 m, 2,400 m, 2,700 m, and 3,000 m from the start.

Q3 Red and blue flags are to be placed alternately at every 50 m. How many red and blue flags are needed till the finish line?

SOLUTION

Total positions = 3,000 / 50 = 60 flag positions.
Red and blue flags alternate: red at positions 1, 3, 5, ... (odd) and blue at 2, 4, 6, ... (even).
Red flags: positions 50 m, 150 m, 250 m, ... = 30 red flags.
Blue flags: positions 100 m, 200 m, 300 m, ... = 30 blue flags.

Answer: 30 red flags and 30 blue flags (60 flags in total).

Exercise 5.7 — Let Us Do — Longest Train Journey (Vivek Express route) (p. 60)

Q1 The total length of the route from Dibrugarh to Kanniyakumari is _____ km.

SOLUTION

From the table, the distance of Kanniyakumari from Dibrugarh is 4,187 km.
So the total length of the route = 4,187 km.

Answer: 4,187 km

Q2 The distance between Vijayawada and Jalpaiguri Road is _____.

SOLUTION

Vijayawada JN is at 2,800 km from Dibrugarh.
Jalpaiguri Road is at 983 km from Dibrugarh.
Distance between them = 2,800 - 983 = 1,817 km.

Answer: 1,817 km

Q3 Distance between Vijayawada and Visakhapatnam is _____.

SOLUTION

Vijayawada JN is at 2,800 km from Dibrugarh.
Visakhapatnam is at 2,450 km from Dibrugarh.
Distance = 2,800 - 2,450 = 350 km.

Answer: 350 km

Q4 Which two stations are farther apart — Guwahati and Dimapur or Bhubaneswar and Jalpaiguri Road?

SOLUTION

Guwahati (556 km) and Dimapur (306 km): distance = 556 - 306 = 250 km.
Bhubaneswar (2,007 km) and Jalpaiguri Road (983 km): distance = 2,007 - 983 = 1,024 km.
1,024 km > 250 km.
Bhubaneswar and Jalpaiguri Road are farther apart.

Answer: Bhubaneswar and Jalpaiguri Road are farther apart (1,024 km vs 250 km).

Q5 What is the distance between Guwahati and Coimbatore JN?

SOLUTION

Coimbatore JN is at 3,675 km from Dibrugarh.
Guwahati is at 556 km from Dibrugarh.
Distance = 3,675 - 556 = 3,119 km.

Answer: 3,119 km

Exercise 5.8 — Let Us Explore — The World of Small Things, counting mm marks on a ruler (p. 61)

Q1 Look at the scale (ruler). Count how many marks are there between 1 cm and 2 cm.

SOLUTION

Look at the ruler in the picture. Between 1 cm and 2 cm there are 9 small marks.
These 9 marks divide the 1 cm space into 10 equal parts.
Each part is 1 mm (millimetre).
So 1 cm = 10 mm.

Answer: There are 9 marks between 1 cm and 2 cm, making 10 equal parts. Each part = 1 mm, so 1 cm = 10 mm.

Exercise 5.9 — Let Us Measure — Measure lines in a design in cm and mm (p. 61)

Q1 Measure the lines in the design and write their measurements in cm and mm.

SOLUTION

This is a hands-on measurement activity using a ruler.
Place your ruler carefully along each line in the design printed in the book.
Read the measurement to the nearest mm mark.
Write each measurement in the form: ___ cm ___ mm.
Example: if a line ends at the 3rd mm mark after 4 cm, write 4 cm 3 mm.
Each student's measurements may vary slightly depending on the printed copy.

Answer: Hands-on activity. Use a ruler to measure each line to the nearest mm and record as ___ cm ___ mm.

Exercise 5.10 — Let Us Do — Measuring sprout growth in mm over 4 days (p. 62)

Q1 Soak moong or chana seeds overnight. Wrap in moist cloth to sprout. Over 4 days, take out one seed each day and measure the length of the sprout in mm. Record in the table: Day 1, Day 2, Day 3, Day 4.

SOLUTION

This is a science-linked hands-on activity. Here is a model answer.

Step 1: Soak seeds overnight, then keep them in a moist cloth for sprouting.

Step 2: Each day, take out one seed. Place it on paper, mark the tip of the sprout, and measure with a ruler.

Step 3: Record in mm (use the mm marks on your ruler).

Model readings (yours will differ):

Day 1: 2 mm

Day 2: 5 mm

Day 3: 9 mm

Day 4: 14 mm

You should see the sprout getting longer each day.

Answer: Hands-on activity. Measure the sprout each day using a ruler (mm marks). The sprout grows longer each day. Sample: Day 1 ~ 2 mm, Day 2 ~ 5 mm, Day 3 ~ 9 mm, Day 4 ~ 14 mm.

Exercise 5.11 — Let Us Draw — Draw lines of given lengths using a scale (p. 62)

Q1 Draw lines of the following lengths in your notebook using a scale.

1. 5 cm 5 mm
2. 3 cm 6 mm
3. 8 cm 3 mm
4. 36 mm
5. 67 mm

How did you draw lines of lengths 36 mm and 67 mm? Share your thoughts in class.

SOLUTION

To draw a line of a given length:

Mark a starting point with your pencil. Place the '0' mark of your ruler on it.

Find the measurement on the ruler and make a mark there. Join the two points.

1. 5 cm 5 mm = 55 mm: mark at 5 cm then 5 more small marks (5 mm). Draw the line.
2. 3 cm 6 mm = 36 mm: mark at 3 cm then 6 mm. Draw the line.
3. 8 cm 3 mm = 83 mm: mark at 8 cm then 3 mm. Draw the line.
4. 36 mm = 3 cm 6 mm: same as line 2 — find 3 cm then count 6 mm.
5. 67 mm = 6 cm 7 mm: find 6 cm then count 7 mm.

For 36 mm and 67 mm: convert to cm and mm first (36 mm = 3 cm 6 mm; 67 mm = 6 cm 7 mm), then measure on the ruler in the same way.

Answer: Draw each line by placing the ruler's 0 at the start and marking the endpoint. 36 mm = 3 cm 6 mm and 67 mm = 6 cm 7 mm — convert to cm + mm first, then locate on the ruler.

Exercise 5.12 — Let Us Do — Double number lines and unit conversions (p. 63)

Q1 Fill in the blanks appropriately in the double number lines given below.
(a) Top (cm): 1 cm, 7 cm, 15 cm, ___ cm, ___ cm, ___ cm, 50 cm. Bottom (mm): 10 mm, ___ mm, ___ mm, 250 mm, 320 mm, 450 mm, ___ m.
(b) Top (m): 1 m, 4 m, 10 m, ___ m, ___ m, ___ m, 21 m. Bottom (cm): ___ cm, ___ cm, ___ cm, 1,200 cm, 1,400 cm, 1,700 cm, ___ cm.
(c) Top (km): 1 km, 9 km, 25 km, ___ km, ___ km, ___ km, 82 km. Bottom (m): 1,000 m, ___ m, ___ m, 41,000 m, 55,000 m, 67,000 m, ___ m.

SOLUTION

(a) Relationship: 1 cm = 10 mm (multiply by 10).
15 cm = 150 mm; 250 mm = 25 cm; 320 mm = 32 cm; 450 mm = 45 cm; 50 cm = 500 mm = 0.5 m.
Top cm blanks: 25 cm, 32 cm, 45 cm.
Bottom mm blanks: 70 mm (7 cm x 10), 150 mm (15 cm x 10).
Last blank on bottom: 500 mm = 0.5 m (the unit changes to m at this end).

(b) Relationship: 1 m = 100 cm (multiply by 100).
1 m = 100 cm; 4 m = 400 cm; 10 m = 1,000 cm.
1,200 cm = 12 m; 1,400 cm = 14 m; 1,700 cm = 17 m; 21 m = 2,100 cm.
Top m blanks: 12 m, 14 m, 17 m.
Bottom cm blanks: 100 cm (for 1 m), 400 cm (for 4 m), 1,000 cm (for 10 m), 2,100 cm (for 21 m).

(c) Relationship: 1 km = 1,000 m.
9 km = 9,000 m; 25 km = 25,000 m.
41,000 m = 41 km; 55,000 m = 55 km; 67,000 m = 67 km; 82 km = 82,000 m.
Top km blanks: 41 km, 55 km, 67 km.
Bottom m blanks: 9,000 m, 25,000 m, 82,000 m.

Answer: (a) cm blanks: 25, 32, 45; mm blanks: 70, 150; last blank: 500 mm (= 0.5 m). (b) m blanks: 12, 14, 17; cm blanks: 100, 400, 1,000 (left) and 2,100 (right). (c) km blanks: 41, 55, 67; m blanks: 9,000, 25,000 and 82,000.

Q2 Use your understanding from above to fill in the blanks appropriately.

(a) 4 cm 5 mm = _____ mm
(b) 89 mm = ____ cm ____ mm
(c) 234 cm = ____ mm
(d) 514 mm = ____ cm ____ mm
(e) 6 m 34 cm = ____ cm
(f) 20 m 12 cm = ____ cm
(g) 397 m = _____ cm
(h) 5,792 cm = _____m _____ cm
(i) 9,108 cm = _____ m _____ cm
(j) 34 km = _____ m
(k) 6,870 m = ____ km ____ m
(l) 10,552 m = ____ km ___ m
(m) 29 km 30 m = ____ m
(n) 32 km 359 m = ____ m

SOLUTION

(a) 4 cm 5 mm: 4 x 10 = 40 mm, plus 5 mm = 45 mm.
(b) 89 mm = 80 mm + 9 mm = 8 cm 9 mm.
(c) 234 cm = 234 x 10 = 2,340 mm.
(d) 514 mm: 514 / 10 = 51 remainder 4 -> 51 cm 4 mm.
(e) 6 m 34 cm: 6 x 100 = 600, plus 34 = 634 cm.
(f) 20 m 12 cm: 20 x 100 = 2,000, plus 12 = 2,012 cm.
(g) 397 m: 397 x 100 = 39,700 cm.
(h) 5,792 cm: 5,792 / 100 = 57 remainder 92 -> 57 m 92 cm.
(i) 9,108 cm: 9,108 / 100 = 91 remainder 8 -> 91 m 8 cm.
(j) 34 km: 34 x 1,000 = 34,000 m.
(k) 6,870 m: 6,870 / 1,000 = 6 remainder 870 -> 6 km 870 m.
(l) 10,552 m: 10,552 / 1,000 = 10 remainder 552 -> 10 km 552 m.
(m) 29 km 30 m: 29 x 1,000 = 29,000, plus 30 = 29,030 m.
(n) 32 km 359 m: 32 x 1,000 = 32,000, plus 359 = 32,359 m.

Answer: (a) 45 mm (b) 8 cm 9 mm (c) 2,340 mm (d) 51 cm 4 mm (e) 634 cm (f) 2,012 cm (g) 39,700 cm (h) 57 m 92 cm (i) 91 m 8 cm (j) 34,000 m (k) 6 km 870 m (l) 10 km 552 m (m) 29,030 m (n) 32,359 m

Exercise 5.13 — Let Us Do — Adding and Subtracting Lengths (p. 66)

Q1 Rani has two red-coloured ribbon rolls, one of length 3 m 75 cm and another 2 m 25 cm long. How much ribbon does she have?

SOLUTION

Add the lengths: 3 m 75 cm + 2 m 25 cm.
Add cm: 75 + 25 = 100 cm = 1 m.
Add m: 3 + 2 + 1 = 6 m.
Total ribbon = 6 m.

Answer: 6 m

Q2 The distance from Bhopal to Sanchi is 48 km 700 m. Bhadbhada Ghat waterfall is on the way, and 17 km 900 m away from Bhopal. How far is Sanchi from the waterfall?

SOLUTION

Distance from waterfall to Sanchi = Total distance - Distance to waterfall.
= 48 km 700 m - 17 km 900 m.
Convert to metres: 48,700 m - 17,900 m = 30,800 m.
30,800 m = 30,000 m + 800 m = 30 km 800 m.

Answer: 30 km 800 m

Q3 Gulmarg Gondola in Gulmarg, Kashmir is the second longest and second highest cable car in the world. It is divided into two sections. The first section covers 2 km 300 m and the second section covers 2 km 650 m. What is the total distance covered by the cable car?

SOLUTION

Total = 2 km 300 m + 2 km 650 m.
Add m: 300 + 650 = 950 m.
Add km: 2 + 2 = 4 km.
Total = 4 km 950 m.

Answer: 4 km 950 m

Q4 Circle the bigger length and find the difference.
(a) 11 mm and 1 cm
(b) 26 mm and 2 cm
(c) 20 cm and 201 mm
(d) 1,020 mm and 1 m
(e) 2 m and 245 cm
(f) 5,678 m and 6 km
(g) 6 km 1,480 m and 7 km 479 m

SOLUTION

Convert each pair to the same unit, compare, and subtract.

(a) 11 mm vs 1 cm = 10 mm. Circle 11 mm. Difference = 11 - 10 = 1 mm.
(b) 26 mm vs 2 cm = 20 mm. Circle 26 mm. Difference = 26 - 20 = 6 mm.
(c) 20 cm = 200 mm vs 201 mm. Circle 201 mm. Difference = 201 - 200 = 1 mm.
(d) 1,020 mm vs 1 m = 1,000 mm. Circle 1,020 mm. Difference = 1,020 - 1,000 = 20 mm = 2 cm.
(e) 2 m = 200 cm vs 245 cm. Circle 245 cm. Difference = 245 - 200 = 45 cm.
(f) 5,678 m vs 6 km = 6,000 m. Circle 6 km. Difference = 6,000 - 5,678 = 322 m.
(g) 6 km 1,480 m = 7,480 m vs 7 km 479 m = 7,479 m. Circle 6 km 1,480 m. Difference = 7,480 - 7,479 = 1 m.

Answer: (a) Circle 11 mm; difference = 1 mm (b) Circle 26 mm; difference = 6 mm (c) Circle 201 mm; difference = 1 mm (d) Circle 1,020 mm; difference = 20 mm (e) Circle 245 cm; difference = 45 cm (f) Circle 6 km; difference = 322 m (g) Circle 6 km 1,480 m; difference = 1 m

Exercise 5.14 — Multiplying and Dividing Lengths — Cloth, thread, and road problems (p. 66–67)

Q1 We need a 1 m 80 cm cloth to make a shirt for a 10-year-old child. How much cloth will be needed to make shirts for 20 such children?
(The book shows: 20 x 1 m 80 cm = 20 x 1 m and 20 x 80 cm = 20 m + 1,600 cm = 20 m + 16 m = 36 m.)

SOLUTION

20 x 1 m 80 cm = 20 x 1 m + 20 x 80 cm
= 20 m + 1,600 cm
= 20 m + 16 m
= 36 m.

Answer: 36 m of cloth is needed.

Q2 A shop sells cloth for making bags at Rs 100 for 5 m. How much money is needed to buy a 1 m cloth?
Now use the double number line (5 m = Rs 100; 10 m = Rs ___; 20 m = Rs ___; 40 m = Rs ___; ___ m = Rs 2,000) to find the cost or length.

SOLUTION

If 5 m costs Rs 100, then 1 m costs 100 / 5 = Rs 20.

Double number line (multiply both by 2 each step):
5 m -> Rs 100
10 m -> Rs 200
20 m -> Rs 400
40 m -> Rs 800
100 m -> Rs 2,000 (since Rs 2,000 / Rs 20 per m = 100 m).

Answer: 1 m costs Rs 20. Number line: 10 m = Rs 200; 20 m = Rs 400; 40 m = Rs 800; 100 m = Rs 2,000.

Q3 Anita is making an embroidery on the border of a sari. She needs a 1 m long thread to embroider a 50 cm sari. How much thread would she need for a 5 m sari border?
A 1 m long thread costs Rs 50. How much money will be needed to buy the thread?

SOLUTION

5 m sari = 500 cm = 10 x 50 cm.
So she needs 10 x 1 m thread = 10 m of thread.

Cost: 10 m of thread x Rs 50 per m = Rs 500.

Answer: 10 m of thread is needed. Cost = Rs 500.

Q4 A road 12 km 600 m long is being laid in a town. The workers lay an equal length of road each day, and complete the work in 6 days. How much road-laying work is done on each day?

SOLUTION

Total road = 12 km 600 m = 12,000 m + 600 m = 12,600 m.
Work done each day = 12,600 m / 6 = 2,100 m.
2,100 m = 2,000 m + 100 m = 2 km 100 m.

Answer: 2 km 100 m of road is laid each day.

Exercise 5.15 — Let Us Estimate — Heights of buildings, trees, and wells (p. 68)

Q1 Estimate the height of the tallest building in your neighbourhood. What did you use as a reference to estimate the height?

SOLUTION

This is an estimation activity. Here is a model answer.
A single-storeyed house is about 3 m tall.
Count the number of floors in the tallest building.
Multiply: if the building has 5 floors, height is about 5 x 3 = 15 m.
Reference used: height of a single-storeyed house (about 3 m per floor).

Answer: Model: use the height of one floor (about 3 m) as a reference. Multiply by the number of floors. Example: a 5-floor building is about 15 m tall.

Q2 Estimate the height of the tallest tree in your neighbourhood. What did you use as a reference?

SOLUTION

This is an estimation activity. Here is a model answer.
An electric pole is about 9-10 m tall.
Compare the tree with the nearest electric pole.
If the tree looks about 1.5 times taller than the pole, its height is about 1.5 x 10 = 15 m.
Reference used: height of a nearby electric pole or a single-storeyed house.

Answer: Model: compare the tree to a nearby electric pole (about 9-10 m) or a house. Estimate the tree's height as a fraction or multiple of that reference.

Q3 Estimate the depth of a well or swimming pool in your neighbourhood. How did you find out?

SOLUTION

This is an estimation activity. Here is a model answer.
Lower a long rope or string into the well until it touches the bottom.
Mark the rope at the top of the well.
Pull the rope out and measure the marked length using a ruler or tape.
That length is the depth of the well.

Answer: Model: tie a stone to a rope, lower it into the well until it hits the bottom, mark the rope at the mouth of the well, then measure the marked length. That gives the depth.

Exercise 5.16 — Let Us Explore — Inches and feet; measuring your height (p. 68–69)

Q1 Look at your ruler to see if inches are marked on it. Find out how many cm and mm equal 1 inch. (The picture in the book shows 1 inch spans from 0 to 1 inch on the cm scale.)

SOLUTION

From the ruler picture in the book, 1 inch = 2 cm 5 mm.
Check: 2 cm 5 mm = 25 mm.
Also: 1 foot = 12 inches = 12 x 25 mm = 300 mm = 30 cm.

Answer: 1 inch = 2 cm 5 mm. 1 foot = 12 inches = 30 cm.

Q2 Measure Your Height: Stand against a wall and mark your height. Measure the distance between the floor and the marked point in feet and inches. Find out who is the tallest student in your class and their height in feet and inches.

SOLUTION

This is a class activity. Here is how to do it.
Step 1: Stand against the wall. Ask a friend to mark where the top of your head reaches.
Step 2: Measure from the floor to the mark using a ruler with inch markings.
Step 3: Read in feet and inches. Example: 4 feet 2 inches.
Step 4: Compare all classmates' heights and find the tallest.

Tip: 1 foot = 12 inches; 1 inch = 2 cm 5 mm.

Answer: Activity. Stand against a wall, mark height, measure from floor to mark in feet and inches. Compare with classmates to find the tallest.

Exercise 5.17 — Try This — Operation sign Latin square puzzle (p. 69)

Q1 Put appropriate operation sign (+, -, x, /) such that each row, each column, and each 2x2 box (4 quadrants of the 4x4 grid) should not repeat the sign. The grid has these signs already filled in: row 1 col 1 = /, row 1 col 4 = +; row 2 col 2 = x; row 3 col 3 = +; row 4 col 4 = -.

SOLUTION

We need each row, column, and 2x2 quadrant to have all four signs: +, -, x, /.

Using the given clues and solving step by step:
Row 1 has / and +; the missing signs are - and x.
Column 2 has x; it needs +, -, /. Row 1 col 2 must be in {-,x} and col 2 missing -> (1,2) = -.
Then (1,3) = x to complete row 1: / - x +.

Row 2 has x at col 2. Column 4 needs x,/ -> (2,4) in {+,-,/} from row and {x,/} from col -> (2,4) = /.
Column 3 has x at row 1; needs -,/ for rows 2-4. (2,3) in {+,-,/} and col 3 needs - -> (2,3) = -.
Then (2,1) = + (the only sign left in row 2): + x - /.

Row 3 has + at col 3; col 4 has +,/ -> (3,4) = x. Row 3 needs -, / in cols 1,2.
Col 2 has -, x -> needs +,/; (3,2) = /. Then (3,1) = -: - / + x.

Row 4 has - at col 4; col 3 needs / -> (4,3) = /. Col 1 needs x -> (4,1) = x. (4,2) = +: x + / -.

Final grid:
Row 1: / - x +
Row 2: + x - /
Row 3: - / + x
Row 4: x + / -

Answer: Row 1: / - x + | Row 2: + x - / | Row 3: - / + x | Row 4: x + / - (Each row, column, and 2x2 quadrant has all four signs exactly once.)