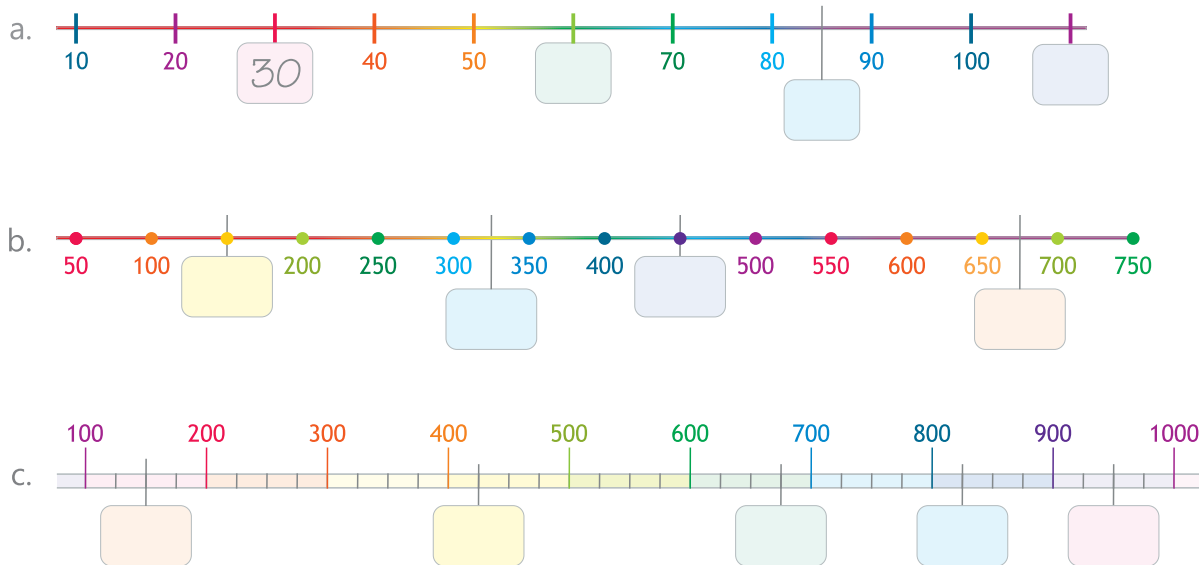
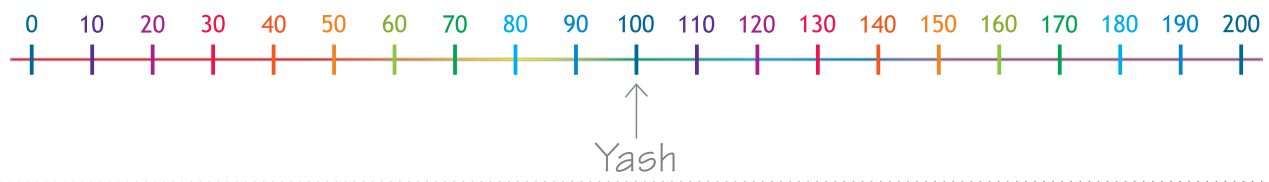


Exercise 1G

1. Fill in the missing numbers.



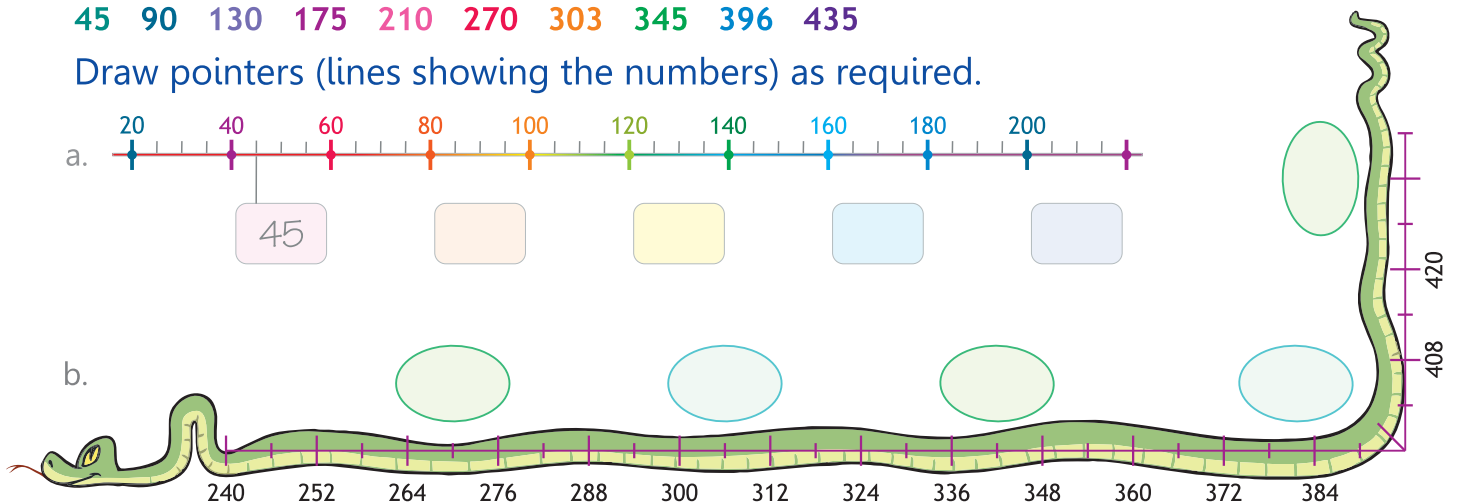
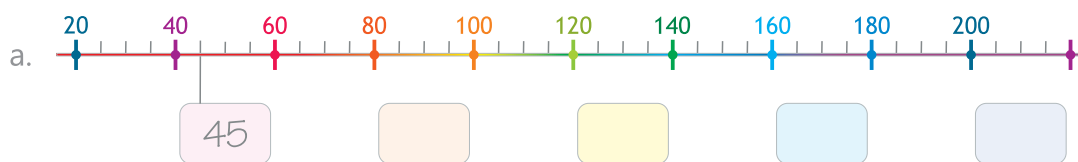
2. In a cricket match, Yash scored a century (century means 100). Sam scored 35 more than Yash. Saaz scored half as much as Yash and twice as much as Rishi. Draw arrows to show their scores on the given number line.



3. Show each of these numbers by estimation on the correct number line.

45 90 130 175 210 270 303 345 396 435

Draw pointers (lines showing the numbers) as required.

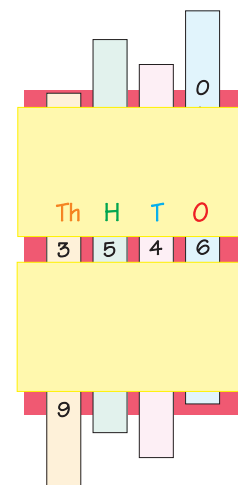
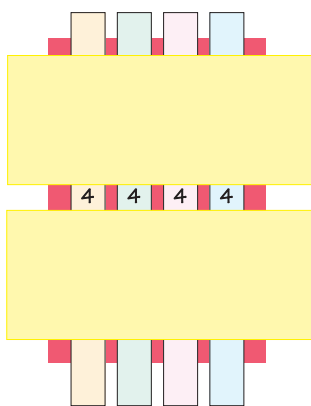
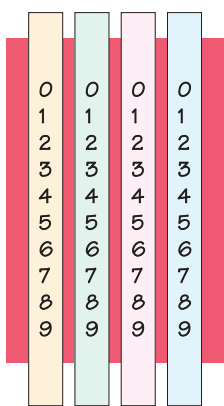




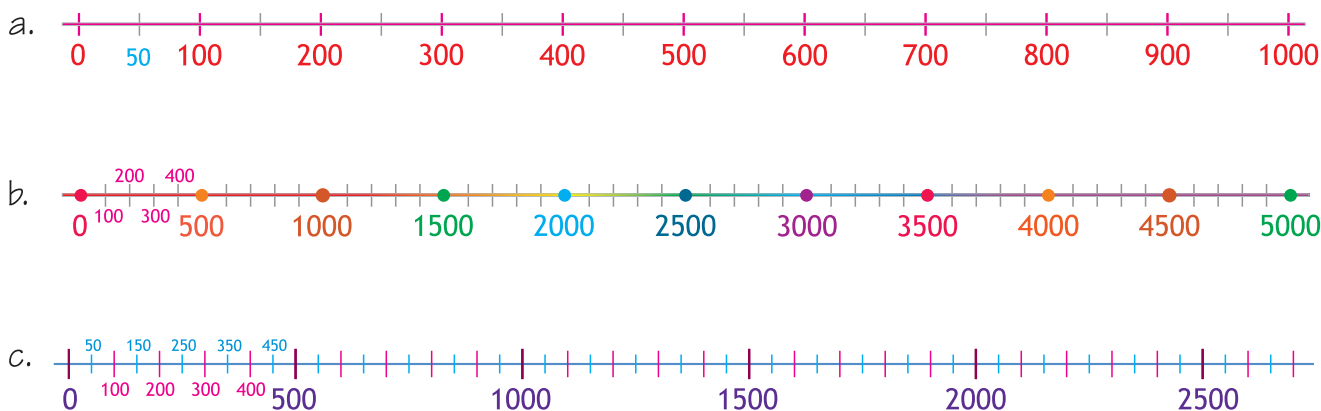
Activity Make and use a number slider

You will need: Two thick sheets of paper, 4 long strips of paper, glue or tape for fixing

Write the digits 0 to 9 on long strips of paper, as shown. Place the strips next to each other on a sheet of paper. Tear or cut another sheet into two long, equal pieces. Place these across the strips. Keep a small gap between them so that you see only one row of digits. Fold and fix the ends of the pieces to the back of the sheet. Write O, T, H and Th, as shown. These show the places of the digits in the gap or 'window'. Slide the strips to make different numbers in the window. Slide the strips to make different numbers in the window.



1. Play with your friend. One of you makes a number on the number slider, the other says the number name. Take turns to make numbers.
2. Show the numbers formed on the number slider.
 - a. $1000 + 200 + 2$
 - b. $2000 + 50 + 9$
 - c. $6000 + 900 + 80 + 5$
3. Show the numbers formed on the number slider. Mark them on the number lines too.
 - a. $400 + 50$
 - b. $4000 + 300$
 - c. $1000 + 800 + 50$



$$1000 + 1000 = 2000$$

$$2000 + 2000 = 4000$$

$$4000 + 1000 = 5000$$

$$3000 + 4000 = 7000$$

$$8000 + 1000 = 9000$$

$$4000 + 5000 = 9000$$

Exercise 4B

1. Add.

a. $40 + 10 =$ _____

b. $50 + 30 =$ _____

c. $0 + 10 =$ _____

d. $700 + 100 =$ _____

e. $300 + 400 =$ _____

f. $800 + 200 =$ _____

g. $2000 + 3000 =$ _____

h. $500 + 0 =$ _____

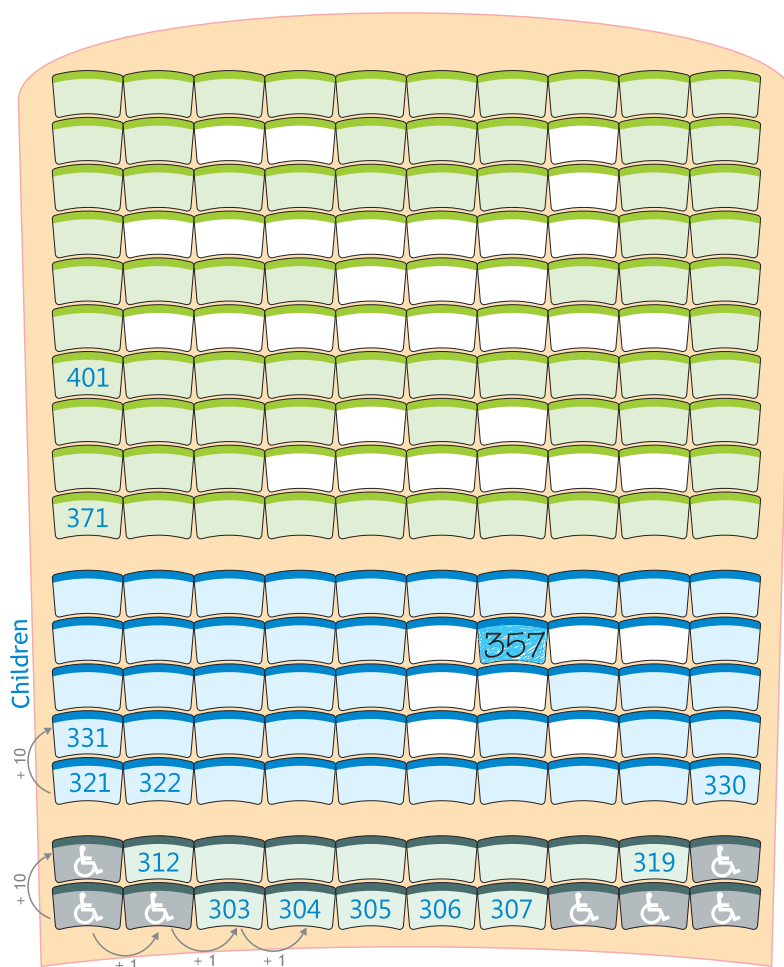
i. $4000 + 4000 =$ _____

j. $1000 + 0 =$ _____

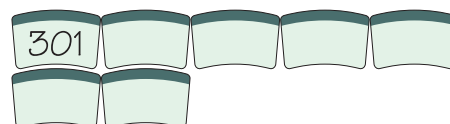
k. $50 + 50 =$ _____

l. $6000 + 3000 =$ _____

2. The seats in a hall have numbers. Some of these numbers are shown. The coloured seats are occupied. The white seats are empty.



- a. Write the seat numbers kept for people in wheelchair.



- b. The seats numbered 357, 358, 385, 386, 387, 395, 415 and 416 are empty now. But these seats are already reserved. Colour and number these seats, as shown.

- c. The blue rows are for kids from a school. 2 kids want to sit next to each other in the blue rows. Which empty seats can they take?



- d. Find place for a family of 6 people. They all want to sit together in the same row. Write their seat numbers.



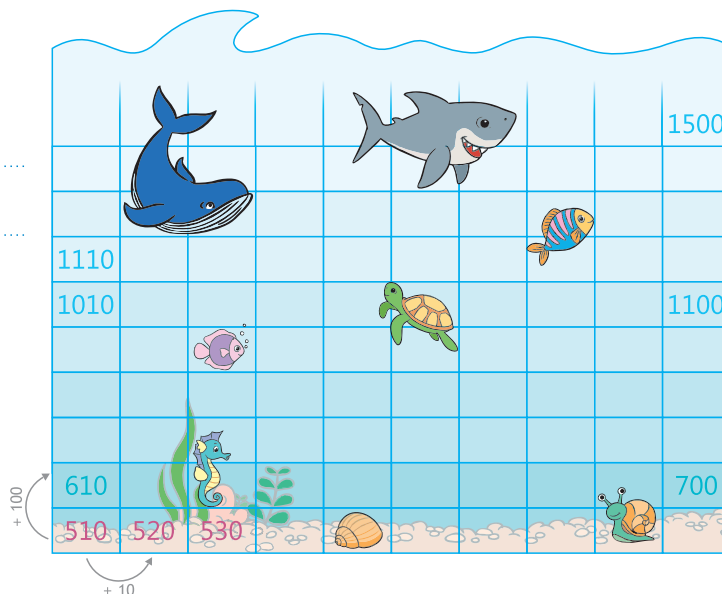
5. Write the numbers of the boxes in which you see these.

a.  1180 b.  1280

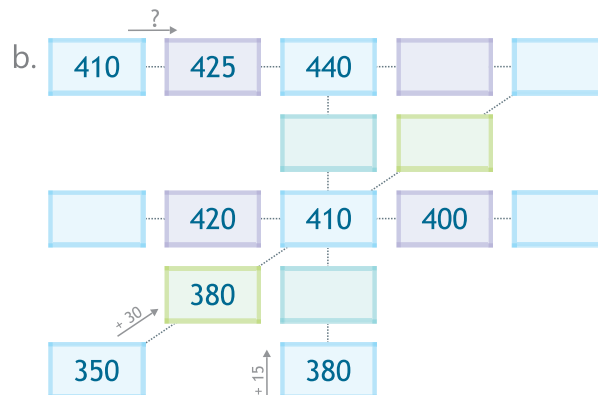
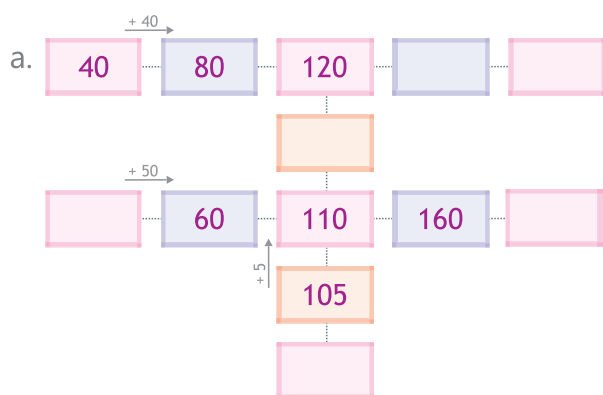
d. 

e. 

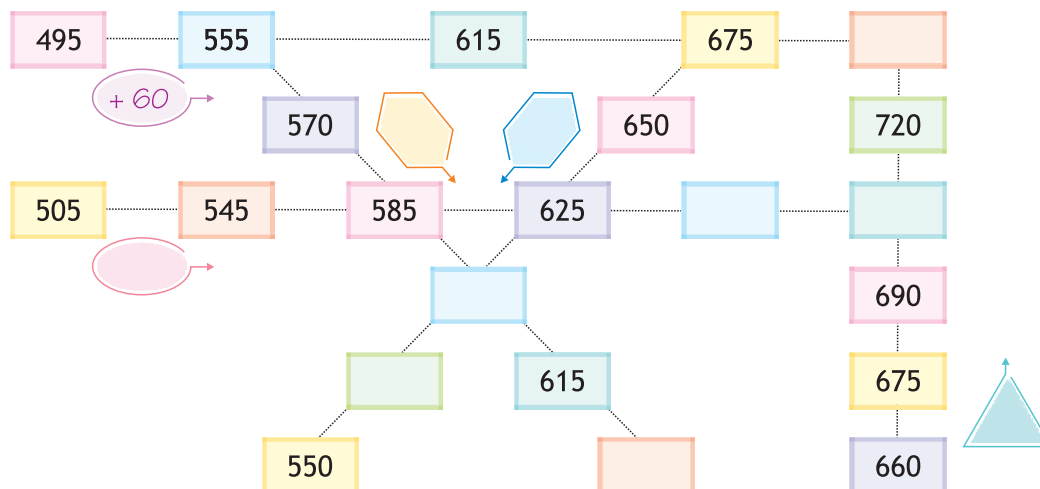
f. 



6. Carry on the pattern along each line and fill in.



7. Find the pattern along each line and fill in all coloured shapes.





A way to estimate the difference of numbers

We can estimate the difference of two numbers by using their nearest simple numbers that have 0s at the end. Here are the steps.

- 1 For each number, check the second digit from the left. If it is 5 or more, increase the leftmost digit by 1. If it is less than 5, do not change the leftmost digit.
- 2 Change all digits after the leftmost digit to 0s.

Now you have simpler numbers that you can subtract in your head.

Examples

$$398 - 287 \rightarrow 400 - 300 \\ = \text{about } 100 \text{ (actual } 111)$$

$$5728 - 3622 \rightarrow 6000 - 4000 \\ = \text{about } 2000 \text{ (actual } 2106)$$

$$6993 - 581 \rightarrow 7000 - 600 \\ = \text{about } 6400 \text{ (actual } 6412)$$

Estimate.

a. $784 - 382$

b. $4839 - 529$

c. $6387 - 2376$

d. $8996 - 1065$



1. Fill in as shown.

a.

	8	5	7
6 + 2 = 8		5 + 0 = 5	
-	2	5	4
	6	0	3
			7 - 3 = 4

b.

		5	6
+	2		
	5	8	6

c.

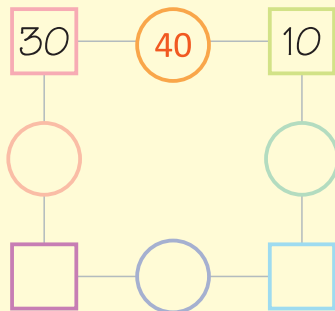
		8	7
-	5		
	4	4	0

d.

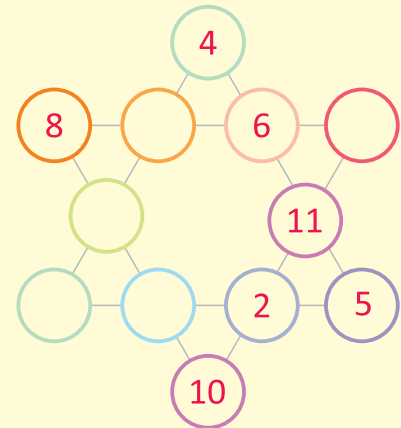
	5			7
+		5	2	
	9	7	2	8

2. Fill in 10, 20, 30, 40, 50, 60, 70, 80.

Do not repeat.
Along each side,
the numbers in
the squares
must add up to
the number in
the circle.



3. Put numbers
1 to 12 in the
circles so that
the sum along
each line is
the same. Do
not repeat
numbers.



4. Do these mentally (in your head).

a. $200 + 300 + 20 + 30$

b. $100 + 200 + 300 + 40$

c. $1000 + 100 + 400 + 10$

d. $2000 + 3000 + 500 + 50$

e. $2000 + 2000 + 200 + 20 + 2$

f. $3000 + 1000 + 500 + 40 + 5$

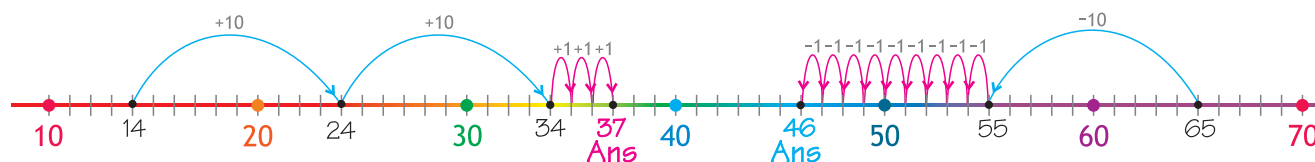


New ways to add and subtract on a number line

On a number line, we jump by 1000s, 100s, 10s or 1s to the right to add and, to the left to subtract. How many 1000s, 100s, 10s or 1s to add or subtract? These are given by the digits at the ones, tens, hundreds or thousands places of the second number. See these examples.

$14 + 23$ 23 has 2 tens and 3 ones. To add 23: 2 jumps of ten and 3 jumps of one to the right.

$65 - 19$ In 19, T: 1, O: 9. To subtract 19: 1 jump of ten and 9 jumps of one to the left.

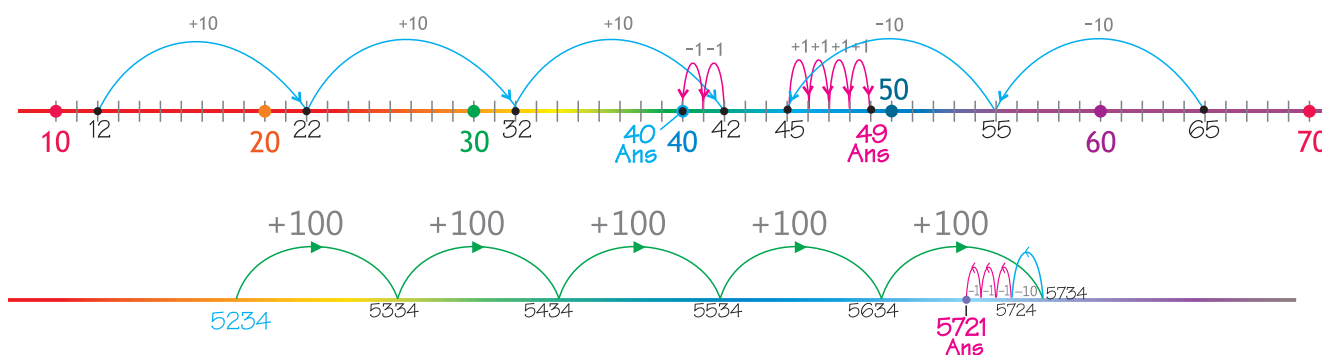


To reduce the number of jumps, you may jump to the nearest neighbour of a number. And then adjust for the changed number. This is useful for large numbers. We can do the sums on open number lines.

$12 + 28$ Nearest neighbour of 28: 30. To add: 3 jumps of ten. Subtract 2 to adjust ($30 - 28 = 2$).

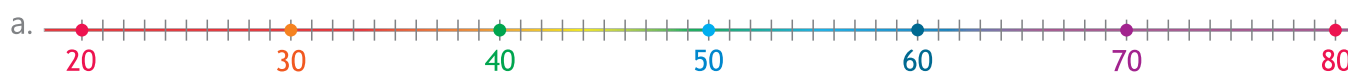
$65 - 16$ Nearest neighbour of 16: 20. To subtract: 2 jumps of ten. Add 4 to adjust ($20 - 16 = 4$).

$5234 + 487$ Nearest neighbour of 487: 500. To add: 5 jumps of 100. Then subtract 13 ($500 - 487 = 13$).



1. Do these sums on the number lines below.

a. $28 + 14$ and $75 - 19$ b. $170 + 50$ and $600 - 120$



2. Do these sums in your copy on open number lines.

a. $228 + 34$ b. $325 - 86$ c. $1527 + 357$ d. $7345 - 838$ e. $6421 - 4283$ f. $8059 + 1077$

2. a. $\begin{array}{r} \text{H T O} \\ 142 \\ - 19 \\ \hline \end{array}$

b. $\begin{array}{r} \text{H T O} \\ 350 \\ - 42 \\ \hline \end{array}$

c. $\begin{array}{r} \text{H T O} \\ 431 \\ - 305 \\ \hline \end{array}$

d. $\begin{array}{r} \text{H T O} \\ 263 \\ - 247 \\ \hline \end{array}$

e. $\begin{array}{r} 564 \\ - 327 \\ \hline \end{array}$

f. $\begin{array}{r} 737 \\ - 419 \\ \hline \end{array}$

g. $\begin{array}{r} 994 \\ - 888 \\ \hline \end{array}$

h. $\begin{array}{r} 820 \\ - 507 \\ \hline \end{array}$

3. a. $\begin{array}{r} 1593 \\ - 75 \\ \hline \end{array}$

b. $\begin{array}{r} 2975 \\ - 526 \\ \hline \end{array}$

c. $\begin{array}{r} 5782 \\ - 654 \\ \hline \end{array}$

d. $\begin{array}{r} 3416 \\ - 408 \\ \hline \end{array}$

e. $\begin{array}{r} 4444 \\ - 4339 \\ \hline \end{array}$

f. $\begin{array}{r} 6353 \\ - 3346 \\ \hline \end{array}$

g. $\begin{array}{r} 7695 \\ - 7637 \\ \hline \end{array}$

h. $\begin{array}{r} 9680 \\ - 8021 \\ \hline \end{array}$



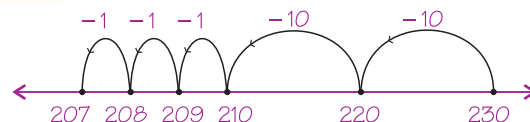
Doing the same sum in different ways

Let us do this sum. Then, let us do the same sum on a grid and on a number line.

$$\begin{array}{r} 2 \overset{2}{\cancel{3}} \overset{10}{\cancel{0}} \\ - 23 \\ \hline 207 \end{array}$$

221	222	223	224	225	226	227	228	229	230
211	212	213	214	215	216	217	218	219	220
201	202	203	204	205	206	207	208	209	210

$$\begin{aligned} 230 - 23 &= 230 - 20 - 3 \\ &= 230 - 10 - 10 - 1 - 1 - 1 \end{aligned}$$

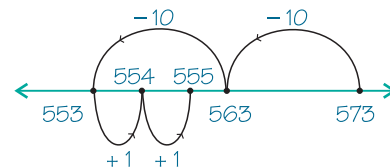


Another sum:

$$\begin{array}{r} 5 \overset{6}{\cancel{7}} \overset{13}{\cancel{3}} \\ - 18 \\ \hline 555 \end{array}$$

551	552	553	554	555	556	557	558	559	560
561	562	563	564	565	566	567	568	569	570
571	572	573	574	575	576	577	578	579	580

$$\begin{aligned} 573 - 18 &= 573 - 10 - 8 \\ &= 573 - 10 - 10 + 2 \\ &= 573 - 10 - 10 + 1 + 1 \end{aligned}$$



◆ **Note** On number grids and number lines, we can subtract without knowing about borrowing.



Using repeated subtraction to divide by a big number

A chef baked 8 batches of cookies, 6 in every batch. He had 162 nuts. He put an equal number of them in each cookie. How many nuts did he put in each cookie? How many nuts are left? Are there enough for another batch?



$$\begin{array}{r} 6 \\ \times 8 \\ \hline 48 \end{array}$$

Cookies made

$$\begin{array}{r} 1 \overset{5}{\cancel{6}} \overset{12}{\cancel{2}} \\ - 48 \\ \hline 114 \end{array}$$

Nuts left after
putting 1 on each

$$\begin{array}{r} 0 \overset{10}{\cancel{10}} \overset{14}{\cancel{14}} \\ - 48 \\ \hline 66 \end{array}$$

Nuts left after
putting 2 on each

$$\begin{array}{r} 5 \overset{16}{\cancel{16}} \\ - 48 \\ \hline 18 \end{array}$$

Nuts left after
putting 3 on each

$$\begin{array}{r} 3 \\ \times 6 \\ \hline 18 \end{array}$$

Nuts needed for
another batch

He put 3 nuts in each cookie. 18 nuts are left. Yes, there are just enough for another batch.

Do these in your copy, using repeated subtraction.

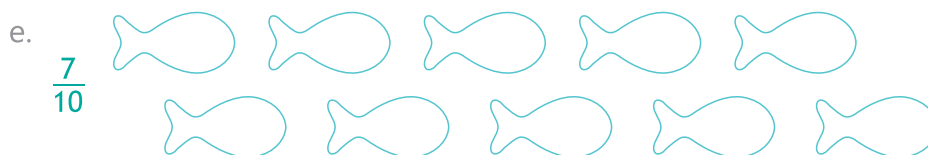
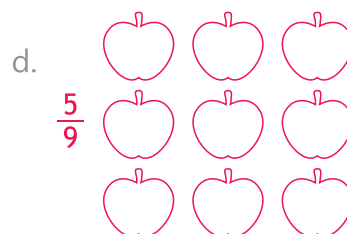
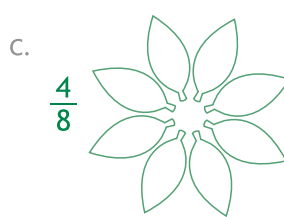
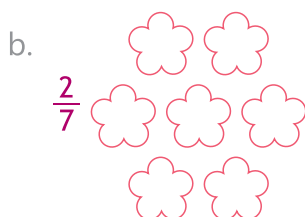
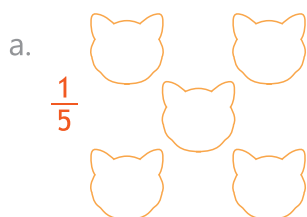
1. There were 44 people at a party. They were served 92 spring rolls. Each person had the same number of rolls. How many rolls did each person have? How many rolls were left?
2. Haribhai bought 155 laddus for a festival. He packed them in boxes of 35. How many boxes did he pack? Did he have enough left to pack 2 boxes of 7?
3. 101 people go to a wedding by a bus. The bus can seat 40. How many trips does it make to the wedding hall? How many people did the bus carry on the last trip?
4. 88 children of a colony make teams of 25. The children left after this make a smaller team. Each team gets different coloured T-shirts. The smallest team gets white T-shirts. So, other than white, how many different colours are needed? How many white T-shirts are needed?
5. The students of a class collected 125 pencils. They made equal gift packs of 40 pencils. How many packs did they make? They want to gift a pack each to Classes 1 to 5 of a nearby school. How many more pencils do they need?



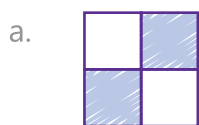
- i. In $\frac{2}{3}$ the numerator is and the denominator is .
- j. In $\frac{5}{7}$ the denominator is and the numerator is .
- k. The fraction whose numerator is 4 and denominator is 9 is .
- l. The fraction whose denominator is 15 and numerator is 13 is .

Exercise 11B

1. Colour to show the fractions.



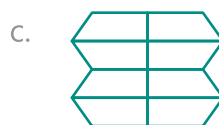
2. Colour the fractions. Then count and write as shown.



$\frac{1}{2}$ of 4 = 2



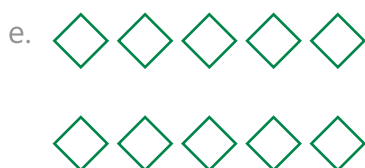
$\frac{1}{3}$ of 6 =



$\frac{2}{4}$ of 8 =



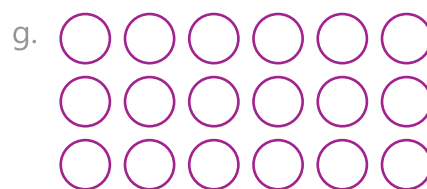
$\frac{2}{3}$ of 9 =



$\frac{2}{5}$ of 10 =



$\frac{3}{4}$ of 12 =



$\frac{4}{6}$ of 18 =



What if the number is big?
Do we draw so many pictures?

We don't have to. Instead, we may divide by the denominator and then multiply by the numerator.
 $\frac{3}{4}$ of 24 = 18. [24 ÷ 4 = 6 and 6 × 3 = 18.]



Exercise 11C

1.  There were a dozen (12) eggs in a tray. A quarter of the eggs were brown and the rest were white. How many eggs were white?

9 eggs were white.
2.  Venu's worksheet has 10 sums. He has done 7. What fraction of the sums does he still have to do?
3.  A pizza is cut into equal pieces and packed equally in 6 boxes. How much of the pizza goes into each box?
4.  In a basketball game, Tanya's team scored 24 baskets. Tanya scored one third of the baskets. How many baskets did she score?
5.  A TV show has 15 episodes. Kabir has missed one fifth of them. How many has he watched?
6.  Every week, Soni spends 18 hours playing games on her phone. She wants to decrease this time by one third. How many hours will she play in a week if she succeeds?

$12 \div 4 = 3.$
 $\therefore \frac{1}{4}$ of 12 = 3.
 So, the number of brown eggs = 3.
 $\therefore$ the number of white eggs = $12 - 3 = 9.$

The metre is not used to measure all lengths. To measure long distances, like the distance between places, we use the **kilometre**. To measure smaller sizes, we use the **centimetre** and the **millimetre**. Your rulers are marked in the smaller units. Here are the short forms of the units.

kilometre → **km**

metre → **m**

centimetre → **cm**

millimetre → **mm**

1 kilometre = 1000 metres

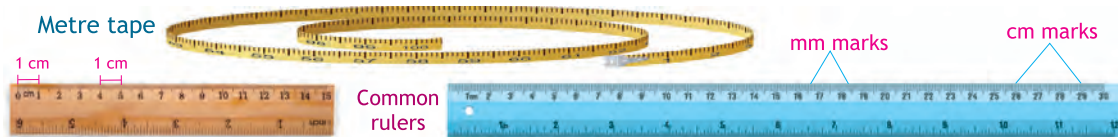
1 metre = 100 centimetres

1 centimetre = 10 millimetres

1 km = 1000 m

1 m = 100 cm

1 cm = 10 mm

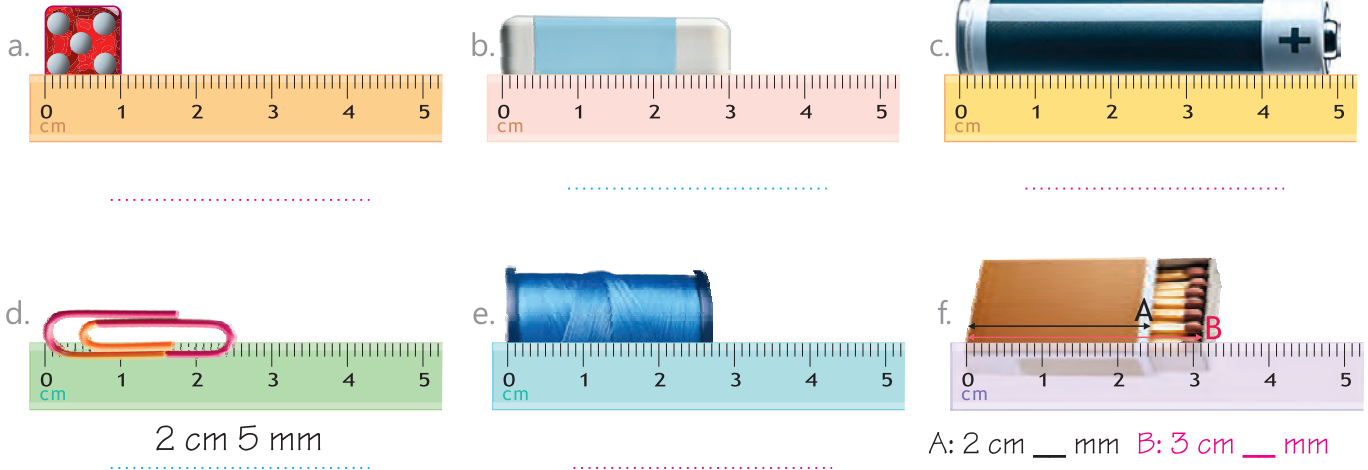


Dividing a unit into smaller parts helps to measure fractions of the unit easily.

half a metre = 50 cm (half of 100 cm = $100 \text{ cm} \div 2$) **one fourth metre = 25 cm** ($100 \text{ cm} \div 4$)

half a centimetre = 5 mm (half of 10 mm) **one tenth of a cm = 1 mm** ($10 \text{ mm} \div 10$)

1. Measure these.



2. Measure these with your ruler and write. Place the ruler along the lines as shown.

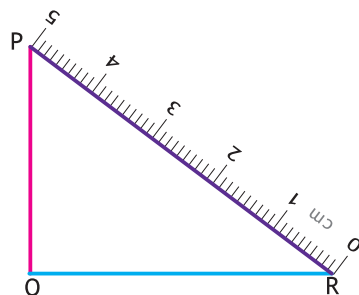
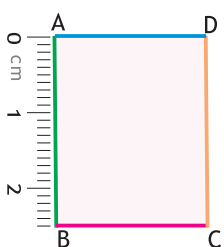
BC = _____

PQ = _____ QR = _____

Distance along the blue line _____ cm _____ mm.

DA = _____

Distance along the yellow line _____ cm _____ mm.



2. Count using the marks and write.

	Marks	Number
		
	 	
	 	
		



These marks are tally marks. ~~||||~~ shows five.



There are other ways to show data. A **pictograph** is a type of chart that uses pictures, icons or symbols to show data. Here is one showing the number of rainy days in each week of July.

Week	Number of rainy days
1	  
2	 
3	  
4	    


1 rainy day

Did you know?
Mawsynram in India gets the most rainfall on the earth.



Here's what the pictograph tells us:

- The week with the highest number of rainy days is week 4 (5).
- Week 2 has the least number of rainy days (2).
- Weeks 1 and 3 have the same number of rainy days (3).
- It rained on 13 days that month.