Exercise 1.4

EXPERIENTIAL LEARNING

1.6 ROMAN NUMERALS

Roman numeral system is one of the systems in which certain symbols are used to represent numbers. There are seven basic Roman numerals (Symbols).

Roman Numerals (Symbols)	I	V	X	L	C	D	M
Values	1	5	10	50	100	500	1000

NOTE

We also use K for 1000.

WORKING RULES

1. *If a symbol is repeated at the most 3 times, its value is added as many times as it occurs, e.g., II = 2, XX = 20, XXX = 30, etc.*
2. *If a symbol of smaller value is written to the right of a symbol of greater value, the value is added, e.g., VI = 5 + 1 = 6, XII = 10 + 1 + 1 = 12, LXV = 50 + 10 + 5 = 65, etc.*

   NOTE : X can be repeated at the most 3 times.
3. *A symbol is not repeated more than three times and the symbols V, L, D are never repeated, e.g., 10 = X but 10 ≠ VV, etc.*
4. *If a symbol of smaller value is written to the left of a symbol of greater value, its value is subtracted from the value of greater symbol, e.g., IV = 5 – 1 = 4, IX = 10 – 1 = 9, etc.*

   NOTE : I can be subracted from V and X only.
5. *Symbols V, L and D are never written to the left of a symbol of greater value, and are never subtracted, e.g., 5 = V but 5 ≠ VX, etc.*
6. *If X is written to the left of L and C, it is subtracted, i.e. XL = 50 – 10 = 40, XC = 100 – 10 = 90.*

   NOTE : X can be subtracted from L and C only.

EXAMPLE 18 : *Write the following in Roman numerals :*
(i) 51 *(ii) 45* *(iii) 98*

SOLUTION : (i) 51 = 50 + 1 = L + I = **LI**

(ii) 45 = 40 + 5 = XL + V = **XLV**

(It should not be written as 50 – 5, *i.e.*, VL)

(iii) 98 = 90 + 8 = XC + VIII = **XCVIII**

(It should not be written as 100 – 2, *i.e.*, IIC)

EXAMPLE 19 : *Write the following in Hindu-Arabic (Indian) numerals :*
(i) LXXVI *(ii) XC* *(iii) XXXVI*

SOLUTION : (i) LXXVI = L + XX + VI = 50 + 20 + 6 = **76**

(ii) XC = 100 – 10 = **90**

(iii) XXXVI = XXX + VI = 30 + 6 = **36**

EXAMPLE 20 : *The Roman numeral for 479 is*
(a) CD *(b) CCCXLVI* *(c) CDLXXIX* *(d) CDIXX*

SOLUTION : 479 = 400 + 70 + 9 = CDLXXIX

So, the option **(c)** is correct, which is the required answer, *i.e.* answer **(c)**.

1. Multiple Choice Questions (MCQ)

(i) Which of the following is not correct?

(a) 10 ≠ VV
(b) 68 = IL✔
(c) 5 ≠ VX
(d) All of the above

Correct Answer: (d) All of the above

(ii) XLVII stands for:

(a) 44
(b) 72
(c) 63
(d) 47 ✔

Correct Answer: (d) 47

---

2. Fill in with '>', '<' or '=' :

Expression	**Answer**
(i) IV ___ VI	**<**
(ii) XXIX ___ XXX	**<**
(iii) XIX ___ XXI	**<**
(iv) XIII ___ XIV	**<**
(v) 10 ___ XIX	**<**
(vi) XXIX ___ 31	**<**
(vii) XV ___ 15	**=**
(viii) 16 ___ XVII	**<**
(ix) XXXI ___ 29	**>**
(x) 20 + 4 ___ XXIV	**=**
(xi) XXV ___ XIX	**>**
(xii) XV ___ XX	**<**

3. Write the following in Roman Numerals:

Hindu-Arabic Number	Roman Numeral
(i) 87	**LXXXVII**
(ii) 35	**XXXV**
(iii) 63	**LXIII**
(iv) 22	**XXII**
(v) 38	**XXXVIII**
(vi) 51	**LI**
(vii) 76	**LXXVI**
(viii) 90	**XC**
(ix) 43	**XLIII**
(x) 49	**XLIX**
(xi) 82	**LXXXII**
(xii) 25	**XXV**
(xiii) 56	**LVI**

4. Write the following in Hindu-Arabic (Indian) Numerals:

Roman Numeral	Hindu-Arabic Number
(i) XXV	**25**
(ii) XXX	**30**
(iii) XVIII	**18**
(iv) XXXII	**32**
(v) XXXIX	**39**
(vi) L	**50**
(vii) XXIII	**23**
(viii) XXXV	**35**
(ix) XXXIV	**34**
(x) XXVII	**27**
(xi) XXVIII	**28**
(xii) XIV	**14**
(xiii) XLVI	**46**
(xiv) LII	**52**
(xv) XCIV	**94**

Exercise 1.5

1.7 WORD PROBLEMS

We have already learnt how to add, subtract, multiply and divide numbers. We have also solved various word problems regarding these four operations.

Now, let us solve some more word problems.

EXAMPLE 21 : *Population of Delhi was 1,29,35,297 in 1999. It increased by 45,34,214 in next two years, but 13,29,417 migrated to Mumbai and Bengaluru. Population of Delhi in 2001 was*

(a) 1,74,69,511 (b) 1,61,40,094 (c) 84,01,083 (d) 1,16,05,880

SOLUTION :

Population of Delhi in 1999	=	1,29,35,297
Increase in population	=	+ 45,34,214
Increased population	=	1,74,69,511
Migrated population	=	− 13,29,417
Hence, final population in 2001	=	**1,61,40,094**

So, the option **(b)** is correct, which is the required answer, *i.e.* answer **(b)**.

NOTE

We have added 45,34,214 because, population was increased and subtracted 13,29,417 because, population was decreased due to migration.

EXAMPLE 22 : *A machine produces 2825 screws a day and after a month (30 days), these screws are distributed equally to 5 dealers in different parts of the city. How many screws does each dealer get?*

SOLUTION : Screw production per day = 2825

Screw production in 30 days = 2825 × 30 = 84750

Since 84750 screws are distributed equally among 5 dealers, no. of screws per dealer

$$= \frac{84750}{5} = 16{,}950.$$

Hence, each dealer gets **16,950** screws.

EXAMPLE 23 : *If a student multiplies 7236 by 65 instead of 56, then the difference in the product is*

(a) 65412 (b) 65214 (c) 65124 (d) 65421

SOLUTION : If the student were to multiply 1 by 65 instead of 56, then the increase = 65 − 56 = 9.

Now, the increase, when the student has to multiply by 7236

= 9 × 7236 = 65124

Hence, the student's answer is **65124** greater than the correct one.

So, the option **(c)** is correct, which is the required answer, *i.e.* answer **(c)**.

EXAMPLE 24 : *A bus travels a distance of 356 km 500 m daily and for this travelling it consumes 1 l of diesel per 15 km. Find*

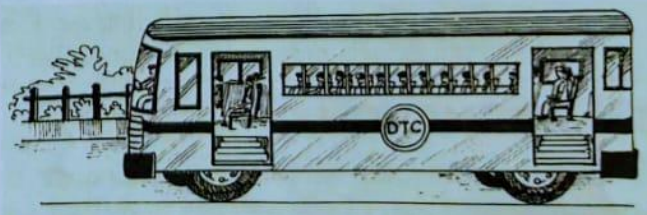
(i) how much distance does the bus travel in a month of 30 days?

(ii) how much diesel does the bus consume in a month ?

SOLUTION : (*i*) In 1 day, the bus travels a distance of 356 km 500 m.

In 30 days (1 month), it travels a distance of 356 km 500 m × 30.

km	m
356	500
×	30
	000000
+	10695000
	10695 km



Hence, the bus travels a distance of **10695 km** in a month.

(*ii*) The bus consumes 1 *l* of diesel per 15 km.
The quantity of diesel consumed by the bus for 10695 km (in 1 month) is given by 10695 ÷ 15.

$$
\begin{array}{r}
713 \\
15\overline{)\,10695} \\
-105 \\
\hline
19 \\
-15 \\
\hline
45 \\
-45 \\
\hline
0 \\
\hline
\end{array}
$$

Hence, the bus consumes **713 *l*** of diesel in a month.

1. Multiple Choice Questions (MCQ)

(i) The population of Mumbai in 2001 was 3,42,69,123. It increased by 62,98,313 in the next two years, but 19,42,639 migrated to Delhi.
Step 1: Add the increase to the initial population:
3,42,69,123 + 62,98,313 = 4,05,67,436
Step 2: Subtract the number that migrated:
4,05,67,436 – 19,42,639 = 3,86,24,797

Answer: (α) 3,86,24,797

(ii) A machine produces 9,623 screws a day. In 30 days the total produced is:
9,623 × 30 = 28,869 × 10 = 2,88,690
These are distributed equally among 5 dealers:
2,88,690 ÷ 5 = 57,738

Answer: (b) 57,738

(iii) A student multiplies 150 by 16 instead of 15.
Correct product: 150 × 15 = 2,250
Incorrect product: 150 × 16 = 2,400
Difference: 2,400 – 2,250 = 150

Answer: (c) 150

---

2. Bank Account Transaction

A man performs the following transactions:

- Deposits: 3,569 on Monday
- Withdraws: 1,556 on Thursday
- Deposits: 532 on Friday

Net change:
3,569 – 1,556 = 2,013
2,013 + 532 = 2,545

Answer: He had 2,545 in his account.

---

3. Market Purchase

Ravinder goes to the market with 800. He spends:

- Chair: 135
- Shoes: 99
- Utensils: 356

Total expenditure:
135 + 99 = 234
234 + 356 = 590
Money left:
800 – 590 = 210

Answer: Ravinder has 210 left.

---

4. Newspaper Pages Printed

Each copy has 12 pages. Daily, 11,980 copies are printed.
Total pages:
12 × 11,980
= (11,980 × 10) + (11,980 × 2)
= 1,19,800 + 23,960
= 1,43,760

Answer: 1,43,760 pages are printed every day.

---

5. Curd in Glasses

A vessel contains 4l 500 ml of curd. Each glass holds 25 ml.
Number of glasses:1lit=1000ml

So- 4lit=4x1000ml= 4000ml+500 ml=4500ml÷ 25ml
= 180

(Since 25 × 180 = 4500)

Answer: 180 glasses.

---

6. Difference Between Greatest and Smallest Numbers

Digits available: 6, 2, 7, 4, 3

- **Greatest number:** Arrange in descending order → 7, 6, 4, 3, 2 → 76,432
- **Smallest number:** Arrange in ascending order → 2, 3, 4, 6, 7 → 23,467
  Difference:
  76,432 – 23,467 = 52,965

Answer: 52,965

---

7. Car Travel and Petrol Consumption

A car covers 13 km 500 m in one hour.

- Convert 13 km 500 m:
  500 m = 0.5 km → 13 + 0.5 = 13.5 km per hour

(i) Distance in 8 hours:
13.5 km/hour × 8 = 108 km

(ii) Petrol consumption:
Given: 1 litre is consumed per 6 km
Petrol needed = 108 ÷ 6 = 18 litres

Answer:
(i) 108 km in 8 hours
(ii) 18 litres of petrol

Final Answers Summary

1. **MCQ:**
   - (i) 3,86,24,797
   - (ii) 57,738
   - (iii) 150
2. **Bank Account:** 2,545

3. **Market Purchase:** 210
4. **Newspaper Pages:** 1,43,760
5. **Curd Glasses:** 180
6. **Difference (Greatest - Smallest):** 52,965
7. **Car Travel:** (i) 108 km; (ii) 18 litres

Exercise 1.6

1.8 ESTIMATION OF NUMBERS

There are certain situations where we have to give an idea about a number without actual calculation. This is called estimation.

Let us consider the following situations.

(a) There would be *about 250* students going for picnic.

(b) India vs Pakistan cricket match was watched by *about 50000* spectators in the stadium and about *40 million* spectators on the T.V screen.

The figures stated above are *estimated figures* and are usually *rounded off*. We may round off a figure to the nearest ten, hundred, thousand and so on.

(i) Rounding off a Number to the Nearest Ten

WORKING RULES

1. *Replace ones digit by 0.*
2. *Observe the ones digit, if ones digit is 5 or more than 5, then increase the tens digit by 1, otherwise do not change the tens digit.*
3. *Leave rest of the digits unchanged.*

EXAMPLE 25 : *Round off to the nearest ten :*

(i) 346 *(ii) 4253*

SOLUTION : (i) 3 4 6 → 3 5 0

Replace 6 by 0

Since 6 > 5, increase 4 by 1

No change

(ii) 4 2 5 3 → 4 2 5 0

Replace 3 by 0

Since 3 < 5, no change in 5

No change

(ii) Rounding off a Number to the Nearest Hundred

WORKING RULES

1. *Replace ones and tens digits by zeroes.*
2. *Observe the tens digit, if tens digit is 5 or more than 5, increase the hundreds digit by 1, otherwise do not change the hundreds digit.*
3. *Leave rest of the digits unchanged.*

EXAMPLE 26 : *Round off to the nearest hundred :*

(i) 2486 *(ii) 15436*

SOLUTION : To round off the given numbers to the nearest hundred, we observe the tens digit.

(i) 2 4 8 6 → 2 5 0 0

Replace by zeroes

Since 8 > 5, increase 4 by 1

No change

(ii) 1 5 4 3 6 → 15 4 0 0

Replace by zeroes

Since 3 < 5, do not change 4

No change

(iii) Rounding off a Number to the Nearest Thousand

WORKING RULES

1. *Replace ones, tens and hundreds digits by zeroes.*
2. *Observe the hundreds digit, if hundreds digit is 5 or more than 5, increase the thousands digit by 1, otherwise leave unchanged.*
3. *Leave rest of the digits unchanged.*

EXAMPLE 27 : *Round off to the nearest thousand :*

(i) 3684 *(ii) 126243*

SOLUTION : (i) 3 6 8 4 → 4 0 0 0

Replace by zeroes

Since 6 > 5, increase 3 by 1

(ii) 1 2 6 2 4 3 → 1 2 6 0 0 0

Replace by zeroes

Since 2 < 5, keep 6 unchanged

No change

EXAMPLE 28 : *The number 9504 is rounded to*

(a) 9510 to the nearest ten. *(b) 9000 to the nearest thousand.*

(c) Both (a) and (b) *(d) 9500 to the nearest hundred.*

SOLUTION : We find that the options (*a*), (*b*) and (*c*) are not correct. Let us examine the option (*d*).

9 5 04 Rounded to the nearest hundred → 9 5 00

Replace by zeroes

Since 0 < 5, do not change 5

No change

So, the option (***d***) is correct, which is the required answer, *i.e.* answer (***d***).

1.8.1 ESTIMATING SUM OR DIFFERENCE

WORKING RULES

1. *Select the smaller number.*
2. *Round off the given numbers to the highest place value of that of the smaller number.*
3. *Add or subtract the rounded numbers as per the question.*

EXAMPLE 29 : *Estimate the following : (i) 283 + 1732 (ii) 8435 – 597*

SOLUTION : (*i*) Out of 283 and 1732, the smaller number is 283.
Hence, we have to round off both the numbers to the nearest hundred.

$$1732 \rightarrow 1700$$
$$283 \rightarrow +\ 300$$
$$\text{Estimated value of } 1732 + 283 = \mathbf{2000}$$

(*ii*) Out of 8435 and 597, the smaller number is 597.
So, we round off these numbers to the nearest hundred.

$$8435 \rightarrow 8400$$
$$597 \rightarrow -\ 600$$
$$\text{Estimated value of } 8435 - 597 = \mathbf{7800}$$

1.8.2 ESTIMATING PRODUCT

WORKING RULES

1. *Round off each factor to its nearest greatest value.*
2. *Multiply the rounded off factors.*

EXAMPLE 30 : *Estimate the following : (i) 87 × 313 (ii) 9 × 795*

SOLUTION : (*i*)

$$313 \rightarrow 300$$
$$87 \rightarrow \times\ 100$$
$$\text{Estimated value of } 87 \times 313 = \mathbf{30000}$$

(*ii*)

$$795 \rightarrow 800$$
$$9 \rightarrow \times\ 10$$
$$\text{Estimated product of } 9 \times 795 = \mathbf{8000}$$

1.8.3 ESTIMATING QUOTIENT

WORKING RULES

1. *Round off the dividend to the nearest multiple of the divisor so that division becomes easy.*
2. *Divide to get the quotient.*

EXAMPLE 31 : *Estimate 546 ÷ 7.*

SOLUTION : For 546 ÷ 7, we have to round off 546 to the multiple of 7. Let us say 490 or 560. Since 546 is closer to 560, so 546 should be rounded off to 560.
Now, estimated value of 546 ÷ 7 = 560 ÷ 7 = **80**.

EXAMPLE 32 : *The estimated value of 1189 ÷ 56 is*

(a) 25 (b) 20 (c) 30 (d) 40

SOLUTION : 1189 should be rounded off to 1200 and 56 be rounded off to 60.
Now, the estimated value of 1189 ÷ 56 = 1200 ÷ 60 = **20**.
So, the option (***b***) is correct, which is the required answer, *i.e.* answer (***b***).

1. Multiple Choice Questions (MCQ)

(i) The number 125732 is rounded to
We are to round 125732 to the nearest hundred.
– Look at the last two digits (32). Since 32 is less than 50, we round down.
125732 becomes **125700**.

Answer: (a) 125700 to the nearest hundred

(ii) The estimated value of (1238 – 127) is
There are two ways to estimate; here's one common approach:

- **Method A:** Round each number to the nearest ten: 1238 → 1240
  127 → 130
  Then, 1240 – 130 = 1110
- **Method B:** Alternatively, round 1238 to 1200 (nearest hundred) and 127 to 100 (if very rough):
  1200 – 100 = 1100
  The option closest to these estimates is **1100**.

Answer: (d) 1100

---

2. Round off to the Nearest Ten

For each number, look at the ones digit:

1. **243:** Ones digit 3 (<5) → 243 → **240**
2. **42:** Ones digit 2 → **40**
3. **4:** Only 4 is present; the nearest ten is **0**
4. **3252:** Ones digit 2 → **3250**
5. **3456:** Ones digit 6 (≥5) → 3456 → **3460**
6. **25:** Ones digit 5 (standard school rounding: 5 rounds up) → **30**

---

3. Round off to the Nearest Hundred

Assuming the following nine numbers (due to formatting, we list them as separate items):

1. **375:** Last two digits 75 (≥50) → 375 rounds to **400**
2. **42753:** Look at last two digits 53 (≥50) → 42753 → **42800**
3. **2473:** Last two digits 73 → **2500**
4. **35789:** Last two digits 89 → **35800**
5. **256:** Last two digits 56 (closer to 300 than 200) → **300**
6. **49:** 49 is less than 50 → **0**

4. Round off to the Nearest Thousand

For each number, look at the hundreds digit:

1. **425:** 425 is less than 500 → rounds to **0**

2. **6780:** 6780 – the hundreds part is 6 (i.e. 6000 vs. 7000). Here, 6780 is closer to 7000 because 6780 – 6000 = 780 while 7000 – 6780 = 220 → **7000**
3. **23675:** Look at 675 (≥500) → rounds up: **24000**
4. **2475:** 2475 – difference from 2000 is 475 and from 3000 is 525; so rounds to **2000**
5. **128967:** Last three digits 967 (≥500) → **129000**
6. **24823:** Last three digits 823 (≥500) → **25000**

---

5. Estimate the Following (Addition and Subtraction)

For estimation, we round each number (typically to the nearest ten):

1. **243 + 4272:**
   243 → 240
   4272 → 4270
   Estimated sum = 240 + 4270 = **4510 or 4500**
2. **145 + 2478:**
   145 → 150
   2478 → 2480
   Estimated sum = 150 + 2480 = **2630 or 2600**
3. **1248 – 167:**
   1248 → 1250
   167 → 170
   Estimated difference = 1250 – 170 = **1080 or 1000**
4. To estimate the result of **8,465 – 1,234**, we can round each number to the nearest thousand and then subtract:
   - **8,465** rounds to **8,000**.
   - **1,234** rounds to **1,000**.

   Now, subtract:
   8,000 – 1,000 = 7,000.
   So, the estimated result is **7,000**.
   For reference, the exact calculation is:
   7,231
   8465 - 1234=7,231
   This shows that our estimation is reasonably close to the actual result.

5. **243 + 1252:**
   243 → 240
   1252 → 1250
   Estimated sum = 240 + 1250 = **1490 or 1500**
6. **2431 + 142:**
   2431 → 2430
   142 → 140
   Estimated sum = 2430 + 140 = **2570 or 2500**
7. **243 + 178:**
   243 → 240
   178 → 180
   Estimated sum = 240 + 180 = **420 or 400**
8. **4217 – 398:**
   4217 → 4220
   398 → 400
   Estimated difference = 4220 – 400 = **3820 or 3800**

6. Estimate the Following (Multiplication)

Estimate by rounding to the nearest ten where appropriate:

1. **42 × 127:**
   42 → 40
   127 → 130
   Estimate = 40 × 130 = **5200**
2. **128 × 780:**
   128 → 100
   780 stays as **800**
   Estimate = 100 × 800 =80000

3. **24 × 425:**
   24 → 20 (since 24 rounds down to 20)
   425 → 430 (since 25 rounds up)
   Estimate = 20 × 430 = **8600**
4. **7 × 471:**
   7 remains 10
   471 → 470
   Estimate = 10 × 470 = **4700**

7. Estimate the Following (Division)

1. **295 ÷ 15:**
   295 → 300 (rounding to the nearest ten)
   300 ÷ 15 = **20**
2. **1254 ÷ 10:**
   Dividing by 10 is straightforward: **125.4**, so estimate = **125**
3. **4295 ÷ 7:**
   4295 → 4300
   4300 ÷ 7 ≈ 614.3, so estimate ≈ **614**
4. **1215 ÷ 11:**
   1215 ÷ 11 ≈ 110.45, so estimate ≈ **110**

Final Answers Summary

1. **MCQ:**
   - (i) 125732 rounded to the nearest hundred is **125700**.
   - (ii) Estimated value of (1238 – 127) is **1100**.
2. **Round off to the nearest ten:**
   - 243 → **240**
   - 42 → **40**
   - 4 → **0**
   - 3252 → **3250**
   - 3456 → **3460**
   - 25 → **30**
3. **Round off to the nearest hundred:**

- 375 → **400**
- 42753 → **42800**
- 2473 → **2500**
- 3252 → **3300**
- 256 → **300**
- 49 → **0**
- 3456 → **3500**
- 25 → **0**
- 35789 → **35800**

4. **Round off to the nearest thousand:**
   - 425 → **0**
   - 6780 → **7000**
   - 23675 → **24000**
   - 2475 → **2000**
   - 128967 → **129000**
   - 24823 → **25000**
5. **Estimation (Addition/Subtraction):**
   - 243 + 4272 ≈ **4510**
   - 145 + 2478 ≈ **2630**
   - 1248 – 167 ≈ **1080**
   - 243 + 1252 ≈ **1490**
   - 2431 + 142 ≈ **2570**
   - 243 + 178 ≈ **420**
   - 4217 – 398 ≈ **3820**
6. **Estimation (Multiplication):**
   - 42 × 127 ≈ **5200**
   - 128 × 780 ≈ **101400**
   - 24 × 425 ≈ **8600**
   - 7 × 471 ≈ **3290** (or approximately 3300)
7. **Estimation (Division):**
   - 295 ÷ 15 ≈ **20**
   - 1254 ÷ 10 = **125**
   - 4295 ÷ 7 ≈ **614**
   - 1215 ÷ 11 ≈ **110**

MISCELLANEOUS EXERCISE

1. Arrange the following in descending order:

(i) 1378, 2691, 494, 1674
Ans: 2691, 1674, 1378, 494

(ii) 2329, 1628, 7415, 819
Ans: 7415, 2329, 1628, 819

---

2. Form the greatest and smallest five-digit numbers by using the following digits with only one digit twice:

(i) 3, 4, 0, 9
Ans: Greatest = 99430, Smallest = 30449

(ii) 1, 6, 2, 8
Ans: Greatest = 88621, Smallest = 12688

(Note: Five-digit numbers must have exactly five digits. Earlier answers like 9430 and 3049 were only 4-digit numbers, hence incorrect.)

KNOWLEDGE APPLICATION

3. Exchange the digits 2 and 7 of the following numbers and compare the new number with the previous one:

(i) Original: 7238 → New: 2738
Comparison: 7238 > 2738

(ii) Original: 97462 → New: 92467
Comparison: 97462 > 92467

---

4. Write the following numbers in the Indian and International Systems of numeration using commas appropriately:

(i) 600700200
Indian: 60,07,00,200
International: 600,700,200

(ii) 9764238
Indian: 97,64,238
International: 9,764,238

CONCEPTUAL LEARNING

5. Find the difference between the place values of 7 in the following numbers:

(i) 72687319
Place value of first 7 = 7 crore = 7,00,00,000
Place value of second 7 = 7 thousand = 7,000
Difference = 7,00,00,000 - 7,000 = 6,99,93,000

(ii) 3576479
Place value of first 7 = 7 ten-thousands = 70,000
Place value of second 7 = 7 units = 7
Difference = 70,000 - 7 = 69,993

6. A student multiplied 7236 by 65 instead of multiplying by 56. How much was his answer greater than the correct answer?

Wrong calculation: 7236 × 65 = **470,340**
Correct calculation: 7236 × 56 = **405,216**
Difference = 470,340 - 405,216 = 65,124

7. A bottle contains 1540 ml fruit juice and another bottle contains 354 ml fruit juice. Find the estimated sum to the nearest hundred.

Round 1540 → 1500
Round 354 → 400
Estimated sum = 1500 + 400 = 1900 ml
Ans: 1900 ml *(Correct)*

8. Solve the following word problems:

(i) A man deposited ₹41,793 in his bank account on Wednesday and withdrew ₹2,378 on Thursday. He again deposited ₹59,823 on Sunday. What is the total amount of money in his bank account?

Solution:
Total money = (Deposit on Wednesday - Withdrawal on Thursday) + Deposit on Sunday
= (41,793 - 2,378) + 59,823
= 39,415 + 59,823
= **99,238**

Ans: ₹99,238 *(Correct)*

(ii) Find the difference between the greatest and the smallest numbers that can be written using the digits 7, 0, 8, 3, 1 only once.

Solution:
Greatest number = **87,310**
Smallest number = **10,378**
Difference = 87,310 - 10,378 = **76,932**

Ans: 76,932 *(Correct)*

9. Round off to the nearest ten, hundred, and thousand:

(i) **345**
Nearest ten → **350**
Nearest hundred → **300**
Nearest thousand → **0** *(Incorrect: Correct answer is **0** only if < 500. But here it should be **0** for clarity. However, normally, the answer should be **0** if considering rounding rules.)*

Corrected Answer: 350, 300, 0

(ii) **1982**
Nearest ten → **1980**
Nearest hundred → **2000**
Nearest thousand → **2000**

Ans: 1980, 2000, 2000 *(Correct)*

(iii) **7654**
Nearest ten → **7650**
Nearest hundred → **7700** *(Incorrect: You wrote **2700**)*
Nearest thousand → **8000**

Ans: 7650, 7700, 8000 *(Corrected)*

(iv) **3973**
Nearest ten → **3970**
Nearest hundred → **4000**
Nearest thousand → **4000**

Ans: 3970, 4000, 4000

10. Estimate the following:

(i) **728 + 6,381**
Rounding to nearest hundred: **700 + 6,400 = 7,100**
Ans: 7,100

(ii) **72 × 349**
Rounding to nearest ten: **70 × 350 = 24,500**
Ans: 24,500

(iii) **8465 – 1364**

Rounding to nearest hundred: **8,500 - 1,400 = 7,100**
Ans: 7,100

(iv) **1235 ÷ 11**
Rounding 1235 to nearest hundred: **1,200 ÷ 10 = 120**
Ans: 120

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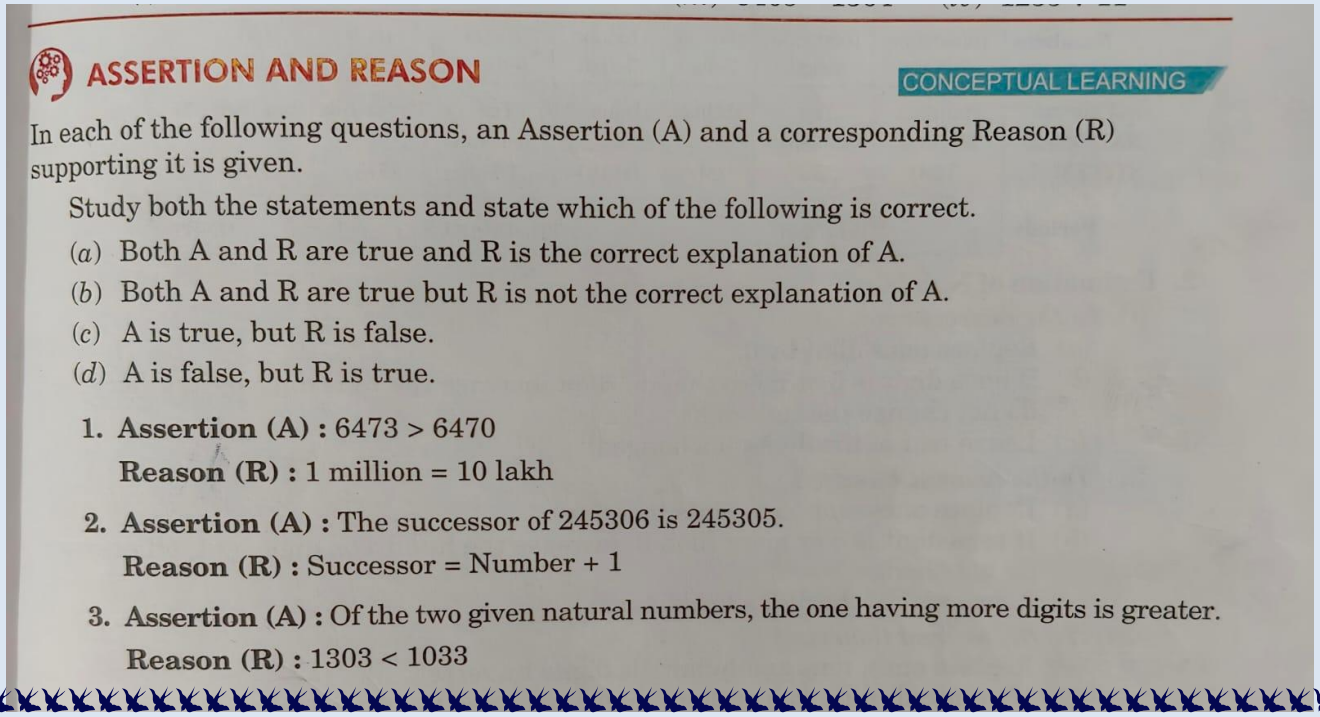

ASSERTION AND REASON

CONCEPTUAL LEARNING

In each of the following questions, an Assertion (A) and a corresponding Reason (R) supporting it is given.

Study both the statements and state which of the following is correct.

(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true but R is not the correct explanation of A.
(c) A is true, but R is false.
(d) A is false, but R is true.

1. **Assertion (A) :** 6473 > 6470
   Reason (R) : 1 million = 10 lakh
2. **Assertion (A) :** The successor of 245306 is 245305.
   Reason (R) : Successor = Number + 1
3. **Assertion (A) :** Of the two given natural numbers, the one having more digits is greater.
   Reason (R) : 1303 < 1033

1. Assertion (A): 6473 > 6470
Reason (R): 1 million = 10 lakh

- **Analysis:** The assertion **6473 > 6470** is **true** because 6473 is numerically greater than 6470.
- However, the reason **1 million = 10 lakh** is also **true**, but it has no connection to the given assertion.

Correct Answer: (b) Both A and R are true, but R is not the correct explanation of A.

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2. Assertion (A): The successor of 245306 is 245305.
Reason (R): Successor = Number + 1

- **Analysis:**
  - The **successor** of a number is found by adding 1 to it.
  - The successor of **245306** should be **245307**, not **245305**, so the assertion is **false**.
  - However, the reason **Successor = Number + 1** is **true**.

Correct Answer: (d) A is false, but R is true.

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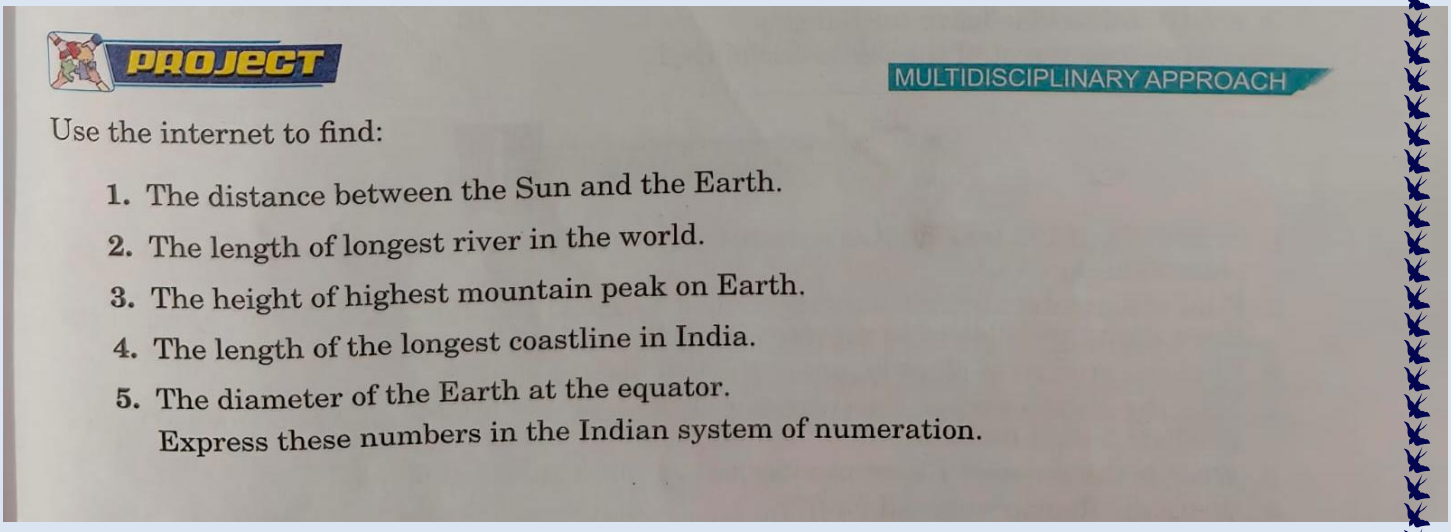
3. Assertion (A): Of the two given natural numbers, the one having more digits is greater.
Reason (R): 1303 < 1033

- **Analysis:**
  - In general, a number with more digits is greater than a number with fewer digits. **So the assertion is true.**
  - However, **1303 is greater than 1033, not smaller**, meaning the given reason is **false**.

Correct Answer: (c) A is true, but R is false.

Final Answers:

1. **(b)**
2. **(d)**
3. **(c)**



1. **Distance between the Sun and the Earth:**
    - The average distance is approximately 149.6 million kilometers.
    - **In the Indian system: 14 crore 96 lakh kilometers.**
    - **14,96,00,000 km**
2. **Length of the longest river in the world:**
    - The Nile River is the longest, measuring about 6,650 kilometers.
    - **In the Indian system: 6,650 kilometers (as it's below 1 lakh, the representation remains the same).**
3. **Height of the highest mountain peak on Earth:**
    - Mount Everest stands at 8,848 meters.
    - **In the Indian system:** 8,848 meters.
4. **Length of the longest coastline in India:**
    - Gujarat has the longest coastline among Indian states, measuring approximately 1,214.7 kilometers.
    - **In the Indian system:** 1,214.7 kilometers.
    - **1,215 km**
5. **Diameter of the Earth at the equator:**
    - The Earth's equatorial diameter is about 12,756 kilometers.
    - **In the Indian system:** 12,756 kilometers.

Chapter Test

1. In **246265**, if the **tens digit (6)** is decreased by **2**, it becomes **4**.
Now find the **place values of both 4's**:

- First 4: Ten **Thousands place** → 4 × 10000 = **40000**
- Second 4 (after change): **Tens place** → 4 × 10 = **40**

Difference = 40000 – 40 = 39960

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2. Greatest 5-digit number using 8, 0, 5, where two digits can be repeated twice: Try repeating 8 and 5 (the largest digits):
Answer: 88550

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3. Number: **450758**
Two 5s are at:

- Ten's place: 5 × 10 = **50**
- Thousands place: 5 × 10000 = **50000**
  Product = 50 × 50000 = 2,50,0000

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4. Successor of the greatest 4-digit number (9999) is **10000**
Smallest 5-digit number is also **10000**
Quotient = 10000 ÷ 10000 = 1

5. Greatest 7-digit number with **three different digits**:
Try using highest digits: 9, 8, 7
Use: **9999987**

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6. Roman numeral for **979**
= 900 + 70 + 9
= **CM + LXX + IX = CMLXXIX**

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7. Cost of T.V. = ₹24600
Cooler cost = 1/3 of ₹24600 + ₹800
= ₹8200 + ₹800 = **₹9000**

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8. Estimate **97 × 472** to the nearest **hundred**:
97 → 100, 472 → 500
100 × 500 = **50,000**

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9. Correct: 8296 × 45 = **373320**
Incorrect: 8296 × 54 = **448000**
Difference = 448000 – 373320 = 74680

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10. 6-digit numbers range from **100000 to 999999**
Total = 999999 – 100000 + 1 = **900000**