



**पुर्णा International School**

**Shree Swaminarayan Gurukul, Zundal**

**MATHEMATICS**

**GRADE VI**

**SPECIMEN COPY**

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# Chapter 1 knowing our number

## Key points to remember

- Given two numbers, one with more digits is the greater number. If the number of digits in two given numbers is the same, that number is larger, which has a greater leftmost digit. If this digit also happens to be the same, we look at the next digit and so on.
- In forming numbers from given digits, we should be careful to see if the conditions under which the numbers are to be formed are satisfied. Thus, to form the greatest four-digit number from 7, 8, 3, 5 without repeating a single digit, we need to use all four digits, the greatest number can have only 8 as the leftmost digit.
- The smallest four-digit number is 1000 (one thousand). It follows the largest three digit number 999. Similarly, the smallest five digit number is 10,000. It is ten thousand and follows the largest four digit number 9999. Further, the smallest six digit number is 100,000. It is one lakh and follows the largest five-digit number 99,999. This carries on for higher digit numbers in a similar manner.
- Use of commas helps in reading and writing large numbers. In the Indian system of numeration we have commas after 3 digits starting from the right and thereafter every 2 digits. The commas after 3, 5 and 7 digits separate thousand, lakh and crore respectively. In the International system of numeration commas are placed after every 3 digits starting from the right. The commas after 3 and 6 digits separate thousand and million respectively.
- Large numbers are needed in many places in daily life. For example, for giving number of students in a school, number of people in a village or town, money paid or received in large transactions (paying and selling), in measuring large distances say between various cities in a country or in the world and so on.
- Remember kilo shows 1000 times larger, Centi shows 100 times smaller and milli shows 1000 times smaller, thus, 1 kilometre = 1000 metres, 1 metre = 100 centimetres or 1000 millimetres etc.
- There are a number of situations in which we do not need the exact quantity but need only a reasonable guess or an estimate. For example, while stating how many spectators watched a particular international hockey match, we state the approximate number, say 51,000, we do not need to state the exact number.
- Estimation involves approximating a quantity to an accuracy required. Thus, 4117 may be approximated to 4100 or to 4000, i.e. to the nearest hundred or to the nearest thousand depending on our need.
- In number of situations, we have to estimate the outcome of number operations. This is done by rounding off the numbers involved and getting a quick, rough answer.
- Estimating the outcome of number operations is useful in checking answers.
- Use of brackets allows us to avoid confusion in the problems where we need to carry out more than one number operation.

We use the Hindu-Arabic system of numerals. Another system of writing numerals is the Roman system

## Exercise 1.1

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### 1. Fill in the blanks:

- (a) 1 lakh = ..... ten thousand.
- (b) 1 million = ..... hundred thousand.
- (c) 1 crore = ..... ten lakh.
- (d) 1 crore = ..... million.
- (e) 1 million = .....lakh

### Solutions:

- (a) 1 lakh = 10 ten thousand = 1,00,000
- (b) 1 million = 10 hundred thousand = 10,00,000
- (c) 1 crore = 10 ten lakh = 1,00,00,000
- (d) 1 crore = 10 million = 1,00,00,000
- (e) 1 million = 10 lakh = 1,00,00,000

### 2. Place commas correctly and write the numerals:

- (a) Seventy three lakh seventy five thousand three hundred seven.
- (b) Nine crore five lakh forty one.
- (c) Seven crore fifty two lakh twenty one thousand three hundred two.
- (d) Fifty eight million four hundred twenty three thousand two hundred two.
- (e) Twenty three lakh thirty thousand ten.

### Solutions:

- (a) The numeral of seventy three lakh seventy five thousand three hundred seven is 73,75,307
- (b) The numeral of nine crore five lakh forty one is 9,05,00,041
- (c) The numeral of seven crore fifty two lakh twenty one thousand three hundred two is 7,52,21,302
- (d) The numeral of fifty eight million four hundred twenty three thousand two hundred two is 58,423,202
- (e) The numeral of twenty three lakh thirty thousand ten is 23,30,010

**3. Insert commas suitably and write the names according to Indian System of Numeration:**

**(a) 87595762 (b) 8546283 (c) 99900046 (d) 98432701**

**Solutions:**

(a) 8,75,95,762 – Eight crore seventy five lakh ninety five thousand seven hundred sixty two

(b) 85,46,283 – Eighty five lakh forty six thousand two hundred eighty three

(c) 9,99,00,046 – Nine crore ninety nine lakh forty six

(d) 9,84,32,701 – Nine crore eighty four lakh thirty two thousand seven hundred one

**4. Insert commas suitably and write the names according to International System of Numeration:**

**(a) 78921092 (b) 7452283 (c) 99985102 (d) 48049831**

**Solutions:**

(a) 78,921,092 – Seventy eight million nine hundred twenty one thousand ninety two

(b) 7,452,283 – Seven million four hundred fifty-two thousand two hundred eighty three

(c) 99,985,102 – Ninety-nine million nine hundred eighty five thousand one hundred two

(d) 48,049,831 – Forty-eight million forty-nine thousand eight hundred thirty-one

## **Exercise 1.2**

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**1. A book exhibition was held for four days in a school. The number of tickets sold at the counter on the first, second, third and final day was respectively 1094, 1812, 2050 and 2751. Find the total number of tickets sold on all the four days.**

**Solutions:**

Number of tickets sold on 1st day = 1094

on 2nd day = 1812

on 3rd day = 2050

on 4th day = 2751

Hence, number of tickets sold on all the four days =  $1094 + 1812 + 2050 + 2751 = 7707$  tickets

**2. Shekhar is a famous cricket player. He has so far scored 6980 runs in test matches. He wishes to complete 10,000 runs. How many more runs does he need?**

**Solutions:**

Shekhar scored = 6980 runs

He want to complete = 10000 runs

Runs need to score more =  $10000 - 6980 = 3020$

Hence, he need 3020 more runs to score.

**3. In an election, the successful candidate registered 5,77,500 votes and his nearest rival secured 3,48,700 votes. By what margin did the successful candidate win the election?**

**Solutions:**

No. of votes secured by the successful candidate = 577500

No. of votes secured by his rival = 348700

Margin by which he won the election =  $577500 - 348700 = 228800$  votes

∴ Successful candidate won the election by 228800 votes

**4. Kirti bookstore sold books worth Rs 2,85,891 in the first week of June and books worth Rs 4,00,768 in the second week of the month. How much was the sale for the two weeks together? In which week was the sale greater and by how much?**

**Solutions:**

Price of books sold in June first week = Rs 285891

Price of books sold in June second week = Rs 400768

No. of books sold in both weeks together = Rs 285891 + Rs 400768 = Rs 686659

The sale of books is the highest in the second week

Difference in the sale in both weeks = Rs 400768 – Rs 285891 = Rs 114877

∴ Sale in second week was greater by Rs 114877 than in the first week.

**5. Find the difference between the greatest and the least 5-digit number that can be written using the digits 6, 2, 7, 4, 3 each only once.**

**Solutions:**

Digits given are 6, 2, 7, 4, 3

Greatest 5-digit number = 76432

Least 5-digit number = 23467

Difference between the two numbers =  $76432 - 23467 = 52965$

∴ The difference between the two numbers is 52965

**6. A machine, on an average, manufactures 2,825 screws a day. How many screws did it produce in the month of January 2006?**

**Solutions:**

Number of screws manufactured in a day = 2825

Since January month has 31 days

Hence, number of screws manufactured in January =  $31 \times 2825 = 87575$

Hence, machine produce 87575 screws in the month of January 2006

**7. A merchant had Rs 78,592 with her. She placed an order for purchasing 40 radio sets at Rs 1200 each. How much money will remain with her after the purchase?**

**Solutions:**

Total money the merchant had = Rs 78592

Number of radio sets she placed an order for purchasing = 40 radio sets

Cost of each radio set = Rs 1200

So, cost of 40 radio sets =  $\text{Rs } 1200 \times 40 = \text{Rs } 48000$

Money left with the merchant =  $\text{Rs } 78592 - \text{Rs } 48000 = \text{Rs } 30592$

Hence, money left with the merchant after purchasing radio sets is Rs 30592

**8. A student multiplied 7236 by 65 instead of multiplying by 56. By how much was his answer greater than the correct answer?**

**Solutions:**

Difference between 65 and 56 i.e  $(65 - 56) = 9$

The difference between the correct and incorrect answer =  $7236 \times 9 = 65124$

Hence, by 65124, the answer was greater than the correct answer

**9. To stitch a shirt, 2 m 15 cm cloth is needed. Out of 40 m cloth, how many shirts can be stitched and how much cloth will remain?**

**Solutions:**

Given

Total length of the cloth = 40 m

=  $40 \times 100 \text{ cm} = 4000 \text{ cm}$

Cloth required to stitch one shirt = 2 m 15 cm

=  $2 \times 100 + 15 \text{ cm} = 215 \text{ cm}$

Number of shirts that can be stitched out of 4000 cm =  $4000 / 215 = 18$  shirts

Hence 18 shirts can be stitched out of 40 m and 1m 30 cm of cloth is left out

**10. Medicine is packed in boxes, each weighing 4 kg 500g. How many such boxes can be loaded in a van which cannot carry beyond 800 kg?**

**Solutions:**

Weight of one box = 4 kg 500 g =  $4 \times 1000 + 500 = 4500 \text{ g}$

Maximum weight carried by the van = 800 kg =  $800 \times 1000 = 800000 \text{ g}$

Hence, number of boxes that can be loaded in the van =  $800000 / 4500 = 177$  boxes

**11. The distance between the school and a student's house is 1 km 875 m. Everyday she walks both ways. Find the total distance covered by her in six days.**

**Solutions:**

Distance covered between school and house = 1 km 875 m =  $1000 + 875 = 1875 \text{ m}$

Since, the student walk both ways.

Hence, distance travelled by the student in one day =  $2 \times 1875 = 3750 \text{ m}$

Distance travelled by the student in 6 days =  $3750 \text{ m} \times 6 = 22500 \text{ m} = 22 \text{ km } 500 \text{ m}$

$\therefore$  Total distance covered by the student in six days is 22 km and 500 m

**12. A vessel has 4 litres and 500 ml of curd. In how many glasses, each of 25 ml capacity, can it be filled?**

**Solutions:**

Quantity of curd in the vessel = 4 l 500 ml =  $4 \times 1000 + 500 = 4500 \text{ ml}$

Capacity of 1 glass = 25 ml

$\therefore$  Number of glasses that can be filled with curd =  $4500 / 25 = 180$  glasses

Hence, 180 glasses can be filled with curd.



## Exercise 1.3

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1. Estimate each of the following using general rule:

(a)  $730 + 998$  (b)  $796 - 314$  (c)  $12904 + 2888$  (d)  $28292 - 21496$

Make ten more such examples of addition, subtraction and estimation of their outcome.

**Solutions:**

**(a)  $730 + 998$**

Round off to hundreds

730 rounds off to 700

998 rounds off to 1000

Hence,  $730 + 998 = 700 + 1000 = 1700$

**(b)  $796 - 314$**

Round off to hundreds

796 rounds off to 800

314 rounds off to 300

Hence,  $796 - 314 = 800 - 300 = 500$

**(c)  $12904 + 2888$**

Round off to thousands

12904 rounds off to 13000

2888 rounds off to 3000

Hence,  $12904 + 2888 = 13000 + 3000 = 16000$

**(d)  $28292 - 21496$**

Round off to thousands

28292 round off to 28000

21496 round off to 21000

Hence,  $28292 - 21496 = 28000 - 21000 = 7000$

**Ten more such examples are**

- (i)  $330 + 280 = 300 + 300 = 600$
- (ii)  $3937 + 5990 = 4000 + 6000 = 10000$
- (iii)  $6392 - 3772 = 6000 - 4000 = 2000$
- (iv)  $5440 - 2972 = 5000 - 3000 = 2000$
- (v)  $2175 + 1206 = 2000 + 1000 = 3000$
- (vi)  $1110 - 1292 = 1000 - 1000 = 0$
- (vii)  $910 + 575 = 900 + 600 = 1500$
- (viii)  $6400 - 4900 = 6000 - 5000 = 1000$
- (ix)  $3731 + 1300 = 4000 + 1000 = 5000$
- (x)  $6485 - 4319 = 6000 - 4000 = 2000$

**2. Give a rough estimate (by rounding off to nearest hundreds) and also a closer estimate (by rounding off to nearest tens):**

- (a)  $439 + 334 + 4317$  (b)  $108734 - 47599$  (c)  $8325 - 491$  (d)  $489348 - 48365$**

**Make four more such examples.**

**Solutions:**

- (a)  $439 + 334 + 4317$**

Rounding off to nearest hundreds

$$439 + 334 + 4317 = 400 + 300 + 4300 = 5000$$

Rounding off to nearest tens

$$439 + 334 + 4317 = 440 + 330 + 4320 = 5090$$

- (b)  $108734 - 47599$**

Rounding off to nearest hundreds

$$108734 - 47599 = 108700 - 47600 = 61100$$

Rounding off to nearest tens

$$108734 - 47599 = 108730 - 47600 = 61130$$

- (c)  $8325 - 491$**

Rounding off to nearest hundreds

$$8325 - 491 = 8300 - 500 = 7800$$

Rounding off to nearest tens

$$8325 - 491 = 8330 - 490 = 7840$$

**(d) 489348 – 48365**

Rounding off to nearest hundreds

$$489348 - 48365 = 489300 - 48400 = 440900$$

Rounding off to nearest tens

$$489348 - 48365 = 489350 - 48370 = 440980$$

**Four more examples are as follows**

**(i) 4853 + 662**

Rounding off to nearest hundreds

$$4853 + 662 = 4900 + 700 = 5600$$

Rounding off to nearest tens

$$4853 + 662 = 4850 + 660 = 5510$$

**(ii) 775 – 390**

Rounding off to nearest hundreds

$$775 - 390 = 800 - 400 = 400$$

Rounding off to nearest tens

$$775 - 390 = 780 - 400 = 380$$

**(iii) 6375 – 2875**

Rounding off to nearest hundreds

$$6375 - 2875 = 6400 - 2900 = 3500$$

Rounding off to nearest tens

$$6375 - 2875 = 6380 - 2880 = 3500$$

**(iv) 8246 – 6312**

Rounding off to nearest hundreds

$$8246 - 6312 = 8200 - 6300 = 1900$$

Rounding off to nearest tens

$$8246 - 6312 = 8250 - 6310 = 1930$$

**3. Estimate the following products using general rule:**

**(a)  $578 \times 161$**

**(b)  $5281 \times 3491$**

**(c)  $1291 \times 592$**

**(d)  $9250 \times 29$**

**Make four more such examples.**

**Solutions:**

**(a)  $578 \times 161$**

Rounding off by general rule

578 and 161 rounded off to 600 and 200 respectively

600

$\times 200$

---

120000

---

**(b)  $5281 \times 3491$**

Rounding off by general rule

5281 and 3491 rounded off to 5000 and 3500 respectively

5000

$\times 3500$

---

17500000

---

**(c)  $1291 \times 592$**

Rounding off by general rule

1291 and 592 rounded off to 1300 and 600 respectively

1300

$\times 600$

---

780000

---

**(d) 9250 × 29**

Rounding off by general rule

9250 and 29 rounded off to 9000 and 30 respectively

9000

× 30

---

270000



THANK YOU



# पुर्णिमा International School

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## CLASS 6 MATHS

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## CHAPTER 2 WHOLE NUMBERS

### Key Points:

#### 1) Natural Numbers

Counting numbers are called natural numbers.

#### 2) Whole numbers :

All natural numbers together with '0' are called whole numbers.

Thus 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,..... are whole numbers

Clearly, every natural number is a whole number but 0 is not a whole number.

#### 3) Successor of a whole number:

If we add 1 to a whole number, we get the next whole number, called its successor.

Thus, the successor of 0 is 1, the successor of 1 is 2, the successor of 11 is 12, and so on. Every whole number has its successor.

#### 4) Predecessor of a Whole number :

One less than a given whole number (other than 0), is called its predecessor.

Thus, the predecessor of 1 is 0, the predecessor of 2 is 1, the predecessor of 10 is 9, and so on. **The whole number 0 does not have its predecessor.**

Every whole number other than 0 has its predecessor.

Example : Write the successor and predecessor of :

(i) 1000                      (ii) 1005399                      (iii) 999999

**Solution** (i) The successor of 1000 =  $(1000 + 1) = 1001$

The predecessor of 1000 =  $(1000 - 1) = 999$

(ii) The successor of 1005399 =  $(1005399 + 1) = 1005400$

The predecessor of 1005399 =  $(1005399 - 1) = 1005398$

(iii) The successor of 999999 =  $(999999 + 1) = 1000000$

The predecessor of 999999 =  $(999999 - 1) = 999998$

## **Exercise 2.1**

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**1. Write the next three natural numbers after 10999.**

**Solutions:**

The next three natural numbers after 10999 are 11000, 11001 and 11002

**2. Write the three whole numbers occurring just before 10001.**

**Solutions:**

The three whole numbers occurring just before 10001 are 10000, 9999 and 9998

**3. Which is the smallest whole number?**

**Solutions:**

The smallest whole number is 0

**4. How many whole numbers are there between 32 and 53?**

**Solutions:**

The whole numbers between 32 and 53 are

(33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52)

Hence, there are 20 whole numbers between 32 and 53

**5. Write the successor of:**

**(a) 2440701**

**(b) 100199**

**(c) 1099999**

**(d) 2345670**

**Solutions:**

The successors are

(a)  $2440701 + 1 = 2440702$

(b)  $100199 + 1 = 100200$

(c)  $1099999 + 1 = 1100000$

(d)  $2345670 + 1 = 2345671$



**6. Write the predecessor of:**

**(a) 94 (b) 10000 (c) 208090 (d) 7654321**

**Solutions:**

The predecessors are

(a)  $94 - 1 = 93$

(b)  $10000 - 1 = 9999$

(c)  $208090 - 1 = 208089$

(d)  $7654321 - 1 = 7654320$

**7. In each of the following pairs of numbers, state which whole number is on the left of the other number on the number line. Also write them with the appropriate sign (>, <) between them.**

**(a) 530, 503 (b) 370, 307 (c) 98765, 56789 (d) 9830415, 10023001**

**Solutions:**

**(a)** Since,  $530 > 503$

Hence, 503 is on the left side of 530 on the number line

**(b)** Since,  $370 > 307$

Hence, 307 is on the left side of 370 on the number line

**(c)** Since,  $98765 > 56789$

Hence, 56789 is on the left side of 98765 on the number line

**(d)** Since,  $9830415 < 10023001$

Hence, 9830415 is on the left side of 10023001 on the number line

**8. Which of the following statements are true (T) and which are false (F)?**

**(a) Zero is the smallest natural number.**

**Solution:**False

0 is not a natural number

**(b) 400 is the predecessor of 399.**

**Solution:**False

The predecessor of 399 is 398 Since,  $(399 - 1 = 398)$

**(c) Zero is the smallest whole number.**

**Solution:**True

Zero is the smallest whole number

**(d) 600 is the successor of 599.**

**Solution:**True

Since  $(599 + 1 = 600)$

**(e) All natural numbers are whole numbers.**

**Solution:**True

All natural numbers are whole numbers

**(f) All whole numbers are natural numbers.**

**Solution:**False

0 is a whole number but is not a natural number

**(g) The predecessor of a two digit number is never a single digit number.**

**Solution:**False

Example the predecessor of 10 is 9

**(h) 1 is the smallest whole number.**

**Solution:**False

0 is the smallest whole number

**The natural number 1 has no predecessor.**

**Solution:**True

The predecessor of 1 is 0 but is not a natural number

**(j) The whole number 1 has no predecessor.**

**Solution:**False

0 is the predecessor of 1 and is a whole number

**(k) The whole number 13 lies between 11 and 12.**

**Solution:**False

13 does not lie between 11 and 12

**(l) The whole number 0 has no predecessor.**

**Solution:**True

The predecessor of 0 is -1 and is not a whole number

**(m) The successor of a two digit number is always a two digit number.**

**Solution:**False

As the successor of 99 is 100

## **Exercise 2.2**

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**1. Find the sum by suitable rearrangement:**

**(a)  $837 + 208 + 363$**

**(b)  $1962 + 453 + 1538 + 647$**

**Solutions:**

**(a) Given  $837 + 208 + 363$**

$$= (837 + 363) + 208$$

$$= 1200 + 208$$

$$= 1408$$

**(b) Given  $1962 + 453 + 1538 + 647$**

$$= (1962 + 1538) + (453 + 647)$$

$$= 3500 + 1100$$

$$= 4600$$

**2. Find the product by suitable rearrangement:**

**(a)  $2 \times 1768 \times 50$**

**(b)  $4 \times 166 \times 25$**

**(c)  $8 \times 291 \times 125$**

**(d)  $625 \times 279 \times 16$**

**(e)  $285 \times 5 \times 60$**

**(f)  $125 \times 40 \times 8 \times 25$**

**Solutions:**

**(a) Given  $2 \times 1768 \times 50$**

$$= 2 \times 50 \times 1768$$

$$= 100 \times 1768$$

$$= 176800$$

**(b) Given  $4 \times 166 \times 25$**

$$= 4 \times 25 \times 166$$

$$= 100 \times 166$$

$$= 16600$$

**(c) Given  $8 \times 291 \times 125$**

$$= 8 \times 125 \times 291$$

$$= 1000 \times 291$$

$$= 291000$$

**(d) Given  $625 \times 279 \times 16$**

$$= 625 \times 16 \times 279$$

$$= 10000 \times 279$$

$$= 2790000$$

**(e) Given  $285 \times 5 \times 60$**

$$= 285 \times 300$$

$$= 85500$$

**(f) Given  $125 \times 40 \times 8 \times 25$**

$$= 125 \times 8 \times 40 \times 25$$

$$= 1000 \times 1000$$

$$= 1000000$$

**3. Find the value of the following:**

**(a)  $297 \times 17 + 297 \times 3$**

**(b)  $54279 \times 92 + 8 \times 54279$**

**(c)  $81265 \times 169 - 81265 \times 69$**

**(d)  $3845 \times 5 \times 782 + 769 \times 25 \times 218$**

**Solutions:**

**(a) Given  $297 \times 17 + 297 \times 3$**

$$= 297 \times (17 + 3)$$

$$= 297 \times 20$$

$$= 5940$$

**(b) Given  $54279 \times 92 + 8 \times 54279$**

$$= 54279 \times 92 + 54279 \times 8$$

$$= 54279 \times (92 + 8)$$

$$= 54279 \times 100$$

$$= 5427900$$

**(c) Given  $81265 \times 169 - 81265 \times 69$**

$$= 81265 \times (169 - 69)$$

$$= 81265 \times 100$$

$$= 8126500$$

**(d) Given  $3845 \times 5 \times 782 + 769 \times 25 \times 218$**

$$= 3845 \times 5 \times 782 + 769 \times 5 \times 5 \times 218$$

$$= 3845 \times 5 \times 782 + 3845 \times 5 \times 218$$

$$= 3845 \times 5 \times (782 + 218)$$

$$= 19225 \times 1000$$

$$= 19225000$$

**4. Find the product using suitable properties.**

**(a)  $738 \times 103$**

**(b)  $854 \times 102$**

**(c)  $258 \times 1008$**

**(d)  $1005 \times 168$**

**Solutions:**

**(a) Given  $738 \times 103$**

$$= 738 \times (100 + 3)$$

$$= 738 \times 100 + 738 \times 3 \text{ (using distributive property)}$$

$$= 73800 + 2214$$

$$= 76014$$

**(b) Given  $854 \times 102$**

$$= 854 \times (100 + 2)$$

$$= 854 \times 100 + 854 \times 2 \text{ (using distributive property)}$$

$$= 85400 + 1708$$

$$= 87108$$

**(c) Given  $258 \times 1008$**

$$= 258 \times (1000 + 8)$$

$$= 258 \times 1000 + 258 \times 8 \text{ (using distributive property)}$$

$$= 258000 + 2064$$

$$= 260064$$

**(d) Given  $1005 \times 168$**

$$= (1000 + 5) \times 168$$

$$= 1000 \times 168 + 5 \times 168 \text{ (using distributive property)}$$

$$= 168000 + 840$$

$$= 168840$$

**5. A taxidriver filled his car petrol tank with 40 litres of petrol on Monday. The next day, he filled the tank with 50 litres of petrol. If the petrol costs Rs.44 per litre, how much did he spend in all on petrol?**

**Solutions:**

Petrol quantity filled on Monday = 40 litres

Petrol quantity filled on Tuesday = 50 litres

Total petrol quantity filled = (40 + 50) litre

Cost of petrol per litre = ₹ 44

Total money spent =  $44 \times (40 + 50)$

$$= 44 \times 90$$

$$= \text{Rs. } 3960$$

**6. A vendor supplies 32 litres of milk to a hotel in the morning and 68 litres of milk in the evening. If the milk costs ₹ 45 per litre, how much money is due to the vendor per day?**

**Solutions:**

Milk quantity supplied in the morning = 32 litres

Milk quantity supplied in the evening = 68 litres

Cost of milk per litre = ₹ 45

Total cost of milk per day =  $45 \times (32 + 68)$

=  $45 \times 100$

= Rs. 4500

Hence, the money is due to the vendor per day is Rs. 4500

**7. Match the following:**

(i)  $425 \times 136 = 425 \times (6 + 30 + 100)$

(a) Commutativity under multiplication.

(ii)  $2 \times 49 \times 50 = 2 \times 50 \times 49$

(b) Commutativity under addition.

(iii)  $80 + 2005 + 20 = 80 + 20 + 2005$

(c) Distributivity of multiplication over addition

**Solutions:**

(i)  $425 \times 136 = 425 \times (6 + 30 + 100)$

(c) Distributivity of multiplication over addition.

Hence (c) is the correct answer

(ii)  $2 \times 49 \times 50 = 2 \times 50 \times 49$

(a) Commutativity under multiplication

Hence, (a) is the correct answer

(iii)  $80 + 2005 + 20 = 80 + 20 + 2005$

(b) Commutativity under addition

Hence, (b) is the correct answer

**Exercise 2.3****PAGE NO: 43**

1. Which of the following will not represent zero:

(a)  $1 + 0$

(b)  $0 \times 0$

(c)  $0 / 2$

(d)  $(10 - 10) / 2$

**Solutions:**

(a)  $1 + 0 = 1$

Hence, it does not represent zero

(b)  $0 \times 0 = 0$

Hence, it represents zero

(c)  $0 / 2 = 0$

Hence, it represents zero

(d)  $(10 - 10) / 2 = 0 / 2 = 0$

Hence, it represents zero

**2. If the product of two whole numbers is zero, can we say that one or both of them will be zero? Justify through examples.**

**Solutions:**

If product of two whole numbers is zero, definitely one of them is zero

Example:  $0 \times 3 = 0$  and  $15 \times 0 = 0$

If product of two whole numbers is zero, both of them may be zero

Example:  $0 \times 0 = 0$

Yes, if the product of two whole numbers is zero, then both of them will be zero

**3. If the product of two whole numbers is 1, can we say that one or both of them will be 1? Justify through examples.**

**Solutions:**

If the product of two whole numbers is 1, both the numbers should be equal to 1

Example:  $1 \times 1 = 1$

But  $1 \times 5 = 5$

Hence, its clear that the product of two whole numbers will be 1, only in situation when both numbers to be multiplied are 1

**4. Find using distributive property:**

(a)  $728 \times 101$

(b)  $5437 \times 1001$

(c)  $824 \times 25$

(d)  $4275 \times 125$

(e)  $504 \times 35$



**Solutions:****(a) Given  $728 \times 101$** 

$$\begin{aligned} &= 728 \times (100 + 1) \\ &= 728 \times 100 + 728 \times 1 \\ &= 72800 + 728 \\ &= 73528 \end{aligned}$$

**(b) Given  $5437 \times 1001$** 

$$\begin{aligned} &= 5437 \times (1000 + 1) \\ &= 5437 \times 1000 + 5437 \times 1 \\ &= 5437000 + 5437 \\ &= 5442437 \end{aligned}$$

**(c) Given  $824 \times 25$** 

$$\begin{aligned} &= (800 + 24) \times 25 \\ &= (800 + 25 - 1) \times 25 \\ &= 800 \times 25 + 25 \times 25 - 1 \times 25 \\ &= 20000 + 625 - 25 \\ &= 20000 + 600 \\ &= 20600 \end{aligned}$$

**(d) Given  $4275 \times 125$** 

$$\begin{aligned} &= (4000 + 200 + 100 - 25) \times 125 \\ &= (4000 \times 125 + 200 \times 125 + 100 \times 125 - 25 \times 125) \\ &= 500000 + 25000 + 12500 - 3125 \\ &= 534375 \end{aligned}$$

**(e) Given  $504 \times 35$** 

$$\begin{aligned} &= (500 + 4) \times 35 \\ &= 500 \times 35 + 4 \times 35 \\ &= 17500 + 140 \\ &= 17640 \end{aligned}$$

**5. Study the pattern:**

$$1 \times 8 + 1 = 9 \quad 1234 \times 8 + 4 = 9876$$

$$12 \times 8 + 2 = 98 \quad 12345 \times 8 + 5 = 98765$$

$$123 \times 8 + 3 = 987$$

**Write the next two steps. Can you say how the pattern works?**

**(Hint:  $12345 = 11111 + 1111 + 111 + 11 + 1$ )**

**Solutions:**

$$123456 \times 8 + 6 = 987654$$

$$1234567 \times 8 + 7 = 9876543$$

$$\text{Given } 123456 = (111111 + 11111 + 1111 + 111 + 11 + 1)$$

$$123456 \times 8 = (111111 + 11111 + 1111 + 111 + 11 + 1) \times 8$$

$$= 111111 \times 8 + 11111 \times 8 + 1111 \times 8 + 111 \times 8 + 11 \times 8 + 1 \times 8$$

$$= 888888 + 88888 + 8888 + 888 + 88 + 8$$

$$= 987648$$

$$123456 \times 8 + 6 = 987648 + 6$$

$$= 987654$$

Yes, here the pattern works

$$1234567 \times 8 + 7 = 9876543$$

$$\text{Given } 1234567 = (1111111 + 111111 + 11111 + 1111 + 111 + 11 + 1)$$

$$1234567 \times 8 = (1111111 + 111111 + 11111 + 1111 + 111 + 11 + 1) \times 8$$

$$= 1111111 \times 8 + 111111 \times 8 + 11111 \times 8 + 1111 \times 8 + 111 \times 8 + 11 \times 8 + 1 \times 8$$

$$= 8888888 + 888888 + 88888 + 8888 + 888 + 88 + 8$$

$$= 9876536$$

$$1234567 \times 8 + 7 = 9876536 + 7$$

$$= 9876543$$

Yes, here the pattern works