

CBSE Class 5 Mathematics
NCERT Solutions
CHAPTER-13
WAYS OF MULTIPLY AND DIVIDE

1. Use Bela's method to multiply these numbers.

(a) 32×46

Ans. (a)

$$\begin{array}{r} 32 \\ \times 46 \\ \hline 192 \\ + 1280 \\ \hline 1472 \end{array}$$

(b) 67×18

Ans. (b)

$$\begin{array}{r} 67 \\ \times 18 \\ \hline 536 \\ + 670 \\ \hline 1206 \end{array}$$

2. Do these in your notebook using Bela's method:

(a) 47×19

Ans. (a)

$$\begin{array}{r} 47 \\ \times 19 \\ \hline 423 \\ + 470 \\ \hline 893 \end{array}$$

(b) 188×91

Ans. (b)

$$\begin{array}{r} 188 \\ \times 91 \\ \hline 188 \\ + 16920 \\ \hline 17108 \end{array}$$

(c) 63×57

Ans. (c)

$$\begin{array}{r} 63 \\ \times 57 \\ \hline 441 \\ + 3150 \\ \hline 3591 \end{array}$$

(d) 225×22

Ans. (d)

$$\begin{array}{r} 225 \\ \times 22 \\ \hline 450 \\ + 4500 \\ \hline 4950 \end{array}$$

(e) 360×12

Ans. (e)

$$\begin{array}{r} 360 \\ \times 12 \\ \hline 720 \\ + 3600 \\ \hline 4320 \end{array}$$

3. Shantaram is a special cook who comes only on party days. Last year he was called for only 28 days. For each day he has to be paid Rs. 165. Find out how much money he will get in all?

Ans. Shantaram's one day wages = Rs. 165

Shantaram's 28 days wages = Rs. (165x 28)

$$\begin{array}{r} 165 \\ \times 28 \\ \hline 1320 \\ + 3300 \\ \hline 4620 \end{array}$$

Hence, Shantaram will be paid Rs. 4620.

4. If he called for all days for the year, how much salary will he get?

Ans. Shantaram's one day salary = Rs. 165

Shantaram's one year i.e. 365 days salary = Rs. (165x 365)

$$\begin{array}{r} 165 \\ \times 365 \\ \hline 825 \\ + 9900 \\ + 49500 \\ \hline 60225 \end{array}$$

Hence, Shantaram gets a salary of Rs. 60225.

5. Now find the salaries of the minister and horse rider for 1 year.

Ans. For the minister:

Minister's salary for 1 day = Rs. 195

Minister's salary for 1 year i.e, 365 days = Rs. (195x 365)

$$\begin{array}{r} 195 \\ \times 365 \\ \hline 975 \\ + 17700 \\ + 58500 \\ \hline 71175 \end{array}$$

Hence, the salary of Minister of 1 year is Rs. 71175.

For the horse rider:

Horse rider's salary for one day = Rs. 76

Horse rider's salary for 1 year i.e. 365 days = Rs.(76x 365)

$$\begin{array}{r} 365 \\ \times 76 \\ \hline 2190 \\ + 25550 \\ \hline 27740 \end{array}$$

Hence, the salary of horse rider for 1 year is Rs. 27740. _

6. Years and Years

(a) How many glasses will he drink in one month?

Ans. (a) Number of glasses of water Sohan drinks in one month i.e. 30 days = $(8 \times 30) = 240$

(b) How many glasses will he drink in one year?

Ans. (b) Number of glasses of water Sohan drinks in one year i.e. 365 days = $(8 \times 365) = 2920$

(c) If 125 people living in a colony drink 8 glasses of water in a day, how much water will they drink in a year.

Ans. (c) Number of glasses of water a person drinks in 1 day = 8

Number of glasses of water 125 persons drink in one day = $(8 \times 125) = 1000$

Number of glasses of water 125 persons drink in one year = $(365 \times 1000) = 365000$

7. If Soha's heart beats 72 times in one minute, how many times does it beat in one hour.

(a) Now find out how many times it beats in one day.

Ans. (a) Number of times of Soha's heart beats in 1 minute = 72

Number of times Soha's heart beats in one hour i.e. in 60 minutes = $(72 \times 60) = 4320$

And Number of times Soha's heart beats in one day i.e. in 24 hours = (4320×24)

We have,

$$\begin{array}{r} 4320 \\ \times 24 \\ \hline 17280 \\ + 86400 \\ \hline 103680 \end{array}$$

(b) Count your heart beats to find out how many times your heart beats in one week?

Ans. (b) On counting I find that my hearts 71 times in one minute.

My heart beats $(71 \times 60) = 4260$ times in one hour

My heart beats $(4260 \times 24) = 102240$ times in a day.

My heart beats $(102240 \times 7) = 715680$ times in one week.

(c) A baby elephant drinks around 1.2 L of milk everyday. How much milk will it drink in two years?

Ans. (c) Number of days in 2 years = $(2 \times 365) = 730$

Milk consumption of baby elephant in 1 day = 12 L

Milk consumption of baby elephant in 2 years i.e. 730 days

$$\begin{array}{r} 730 \\ \times 12 \\ \hline 1460 \\ + 7300 \\ \hline 8760 \end{array}$$

Hence, the baby elephant drinks 8760 L of milk in 2 years.

(d) A baby blue whale drinks around 200 L of milk in one day. Just imagine how much milk that is! Find out in how many days your family would use 200 L milk. How much milk would the baby blue whale drink in eight months?

Ans. (d) Milk consumption of baby whale per day = 200 L

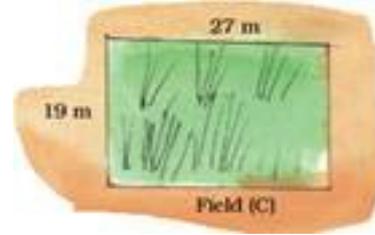
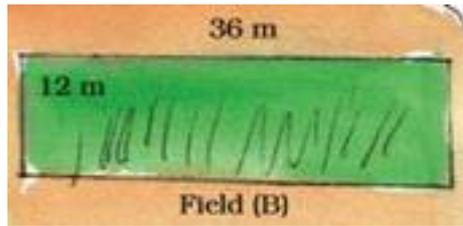
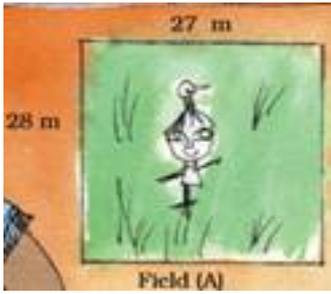
My family will use 200 L milk at the rate of 20 L per day $(200/20)$ i.e. 10 days

Milk consumption of baby whale in one month i.e. in 30 days = (200×30) L = 6000 L

Milk consumption of baby whale in 8 months = (6000×8) L = 48000 L.

8. Karunya- The Landlord

Karunya bought three fields



(a) Find the area of all the three fields.

Field (A) Square metre.

Field (B) Square metre.

Field (C) Square metre.

He bought field (A) at the rate of Rs. 95 for a square metre , field (B) at Rs. 110 for a square metre and field (C) at Rs. 120 for a square metre.

Ans. (a) We know that

Area of rectangle = Length x Breadth

To find the area of fields A, B and C, we have to find

28×27 , 36×12 and 27×19 respectively.

We have,

$$\begin{array}{r} 28 \\ \times 27 \\ \hline 196 \\ + 560 \\ \hline 756 \\ 36 \\ \times 12 \\ \hline 72 \\ + 360 \\ \hline 432 \end{array}$$

(b) Find the cost of all three fields.

Ans. (b) Area of Field (A) = 756 square metre

Area of Field (B) = 432 square metre

Area of Field (C) = 513 square metre

Cost of field (A) at the rate of Rs 95 per square metre = Rs. (95 x 756) = Rs 71820

$$\begin{array}{r} 756 \\ \times 95 \\ \hline 3780 \\ + 68040 \\ \hline 71820 \end{array}$$

Cost of field (B) at the rate of Rs. 110 per square metre = Rs. (110x 432) = Rs. 47520

$$\begin{array}{r} 110 \\ \times 432 \\ \hline 220 \\ + 3300 \\ + 44000 \\ \hline 47520 \end{array}$$

Cost of field (C) at the rate of Rs. 120 per square metre = Rs (120x 513) = Rs. 61560

$$\begin{array}{r} 120 \\ \times 513 \\ \hline 360 \\ + 1200 \\ + 60000 \\ \hline 61560 \end{array}$$

Total costs of these fields = Rs. 71820 + Rs. 47520 + Rs. 61560

= Rs. 180900

9. Tulsi and her husband work on Karunya's farm. The Government has said that farm workers should be paid at least Rs 71 for one day's work. But he pays Rs. 55 to Tulsi and Rs. 58 to her husband.

If Tulsi works for 49 days, how much money does she get?

If her husband works for 42 days, how much money does he get?

Find the money they earn together.

Ans. Tulsi one day's wage = 55 = Rs. (55x 49)

$$\begin{array}{r} 55 \\ \times 49 \\ \hline 495 \\ + 2200 \\ \hline 2695 \end{array}$$

Hence, Tulsi gets Rs. 2695 for her work.

Husband's one-day wage = Rs. 58

Husband's 42 day's wage = Rs. (58x 42)

We have,

$$\begin{array}{r} 58 \\ \times 42 \\ \hline 116 \\ +2320 \\ \hline 2436 \end{array}$$

Hence, Tulsi's husband gets Rs. 2436 for his work.

Money they earned together = Rs. (2695 + 2436) = Rs. 5131

10. The table shows the amount fixed by four states.

(a) For farmwork which state has fixed the highest amount? Which state has fixed the lowest?

Ans. (a) Haryana has fixed the highest salary for one day of the farmworkers whereas Rajasthan has fixed the lowest.

(b) Bhairon Singh is a worker in Rajasthan? If he works for 8 weeks on the farm, how much will he earn?

Ans. (b) Bhairon Singh's 1-day earning = Rs. 73

Bhairon Singh's 1 week earning = Rs. (73x 7) = Rs. 511

Bhairon Singh's 8 weeks earning = Rs. (8x 511) = Rs. 4088

(c) Neelam is a worker in Haryana. If she works for $2\frac{1}{2}$ months on the farm, how much will she earn?

Ans. (c) Number of days in $2\frac{1}{2}$ months = $30 \times 2 + \frac{30}{2} = 60 + 15 = 75$

Neelam's 1 day's earning = Rs. 135

Neelam's $2\frac{1}{2}$ months, 75 day's earning = Rs. (135x 75)

We have,

$$\begin{array}{r} 135 \\ \times 75 \\ \hline 675 \\ + 9450 \\ \hline 10125 \end{array}$$

Hence, Neelam will earn Rs. 10125.

(d) How much more will a farm worker in Madhya Pradesh get than a worker in Orissa after working for 9 weeks.

Ans. (d) Difference in the salary of workers of Madhya Pardesh and Orissa

$$= \text{Rs. } (97 - 75) = \text{Rs. } 22$$

$$\text{Difference in their salary in 1 week} = \text{Rs. } (22 \times 7) = \text{Rs. } 154$$

$$\text{Difference in their salary in 9 weeks} = \text{Rs. } (154 \times 9) = \text{Rs. } 1386$$

Hence, a farmworker in Madhya Pardesh gets Rs. 1386 more than a worker in Orissa after working for 9 weeks.

11. Satish's is a 13 year-old boy. His father had taken loan for farming. But the crops failed. Now Satish's mother has to pay Rs. 5000 every month for the loan. Satish started working- he looked after 17 goats of the village. He earns rupee 1 everyday for one goat.

(a) How much will he earn in one month?

Ans. (a) Satish's earning on 1 goat per day = Re 1

$$\text{Satish's earning on 17 goats per day} = \text{Rs } (1 \times 17) = \text{Rs } 17$$

$$\text{Satish's earning on 17 goats in one month i.e. 30 days} = \text{Rs } (17 \times 30) = \text{Rs. } 510$$

(b) Does he earn enough to help pay the loan every month?

Ans. (b) Satish's earning of 1 year i.e. 12 months = Rs (510x 12) = Rs 6120

12. To help the farmers the State Government gave cows, Kamla Bai Gudhe got a cow. The cost of the cow is 17500. She had to pay Rs. 5500 and the government spent the rest of the money.

(a) How much did the government spend on the cow?

Ans. Cost of the cow = 17500

Kamla Bai Gudhe had to pay the cost of cow = Rs 5500

Money spend by government = Rs 17500 – Rs 5500 = Rs 12000

Hence, the government spend Rs 12000 on the cow.

(b) If 9 people from her village got cows, how much did the government spend in all?

Ans. (b) The amount of money spent by the government on 9 cows = Rs (12000x 9) = Rs 108000.

(c) If Kamla Bai spends Rs. 85 a day, find out how much she will spend in one month?

Ans. (c) Amount spent by Kamla Bai in 1 day = Rs 85

Amount spent by Kamla Bai in 1 month = Rs (85x 30) = Rs 2550

(d) The cow gives 8 liters of milk every day. How much milk it give in one month?

Ans. (d) Quantity of milk given by cow in 1 day = 8 litres

Quantity of milk given by cow in 1 month = (8x 30) litres = 240 litres

(e) If the milk is sold at Rs. 9 per litre, how much money will Kamla Bai make in one month?

So the money spent on keeping the cow was Rs.

Money earned by selling the milk Rs.

Which is more Money spent on the cow or money earned from it? How much?

Ans. (e) Money earned by selling the milk = Rs. (240x 9) = Rs 2160

Since 2550 > 2160

Therefore, money spent on cow was more than the money earned. The difference was Rs (2550-2160) = Rs 390

Due to this loss she wanted to sell the cow.

13. (a) Sukhi works on a farm. He is paid Rs. 98 for one day. If he works for 52 days, how much will he earn?

Ans. (a) Sukhi's 1-day earning = Rs. 98

= Rs (98x 52) = Rs 5096

$$\begin{array}{r} 98 \\ \times 52 \\ \hline 196 \\ + 4900 \\ \hline 5096 \end{array}$$

Hence, Sukhi earns Rs 5096 in 52 days.

(b) Hariya took a loan to build his house. He has to pay back Rs 2750 every month for two years. How much will he pay in 2 years?

Ans. (b) Amount of loan paid back in 1 month = Rs. 2750

Amount of loan paid back in 2 years i.e. (2x 12 = 24 months) = Rs. (2750x 24)

= Rs. 66000

$$\begin{array}{r} 2750 \\ \times 24 \\ \hline 11000 \\ + 55000 \\ \hline 66000 \end{array}$$

(c) Ratiram is a milk seller in the city. He sells 13 litres of milk every day at Rs 23 per litre. How much does he earn?

Ans. Selling price of 1 litres of milk = Rs. 23

Selling price of 13 litres of milk = Rs. (23x 13) = Rs. 299

(d) A farmer sells 1 litres of milk for Rs. 11. In one month he sells 210 litres of milk. How much does he earn in a month?

Ans. (d) Selling price of 1 litres of milk = Rs. 11

Selling price of 210 litres of milk = Rs. (210x 11) = Rs. 2310

(e) A company sells 1 litre of packed water for Rs. 12. A shopkeeper buys 240 litres of packed water. How much does he pay?

Ans. (e) Amount paid for 1 litre of packed water = Rs. 12

Amount paid for 240 litres of packed water = Rs. (12x 240) = Rs. 2880

14. Fun with Multiplication:

(A) Look for the pattern and take this forward.

$$(0 \times 9) + 1 = 1$$

$$(1 \times 9) + 2 = 11$$

$$(12 \times 9) + 3 = 111$$

$$(123 \times 9) + 4 = \underline{\hspace{2cm}}$$

$$(1234 \times 9) + 5 = \underline{\hspace{2cm}}$$

$$(12345 \times 9) + 6 = \underline{\hspace{2cm}}$$

Ans. (A) $(123 \times 9) + 4 = 1107 + 4 = 1111$

$$(1234 \times 9) + 5 = 11106 + 5 = 11111$$

$$(12345 \times 9) + 6 = 11105 + 6 = 111111$$

(B) Each letter a, b, c here stands for a number.

$$\begin{array}{r} a a a \\ \times a a a \\ \hline a a a \\ a a a 0 \\ a a a 0 0 \\ \hline a b c b a \end{array}$$

Taking a =1, then find what the number b and c will be.

Ans. (B) Taking a = 1, so we have to compute 111 x 111 to find the value of b and c.

$$\begin{array}{r} 1 1 1 \\ \times 1 1 1 \\ \hline 1 1 1 \\ 1 1 1 0 \\ 1 1 1 0 0 \\ \hline 1 2 3 2 1 \end{array}$$

On Comparing the answers, we find b =2 and c = 3.

(C) Tricks with your age:

Write your age _____

Multiply it by 7 _____

Again multiply the answer by 13 _____

Now look at your last answer. Can you find your age in that answer? How many times does your age show in the answer? Now try this trick with other people.

Ans. (C) Let be my age by 9 years

On multiplying 9 by 7, we get 63.

Again, multiply 63 by 13, we get 819

Yes, I find my age in the final result. My age occurs two times in the answer.

15. Practice Time:

(a) $4228 \div 4$

Ans. (a)

$$\begin{array}{r} 1000 \\ 4 \overline{)4228} \\ -4000 \\ \hline 228 \\ -200 \\ \hline 28 \\ -28 \\ \hline \underline{X} \end{array}$$

(b) $770 \div 22$

Ans. (b)

$$\begin{array}{r} 35 \\ 22 \overline{)770} \\ -660 \\ \hline 110 \\ -110 \\ \hline \underline{X} \end{array}$$

(c) $9872 \div 8$

Ans. (c)

$$\begin{array}{r} 1234 \\ 8 \overline{)9872} \\ - 8000 \\ \hline 1872 \\ - 1600 \\ \hline 272 \\ - 240 \\ \hline 32 \\ - 32 \\ \hline \underline{X} \end{array}$$

(d) $672 \div 21$

Ans. (d)

$$\begin{array}{r} 32 \\ 21 \overline{)672} \\ - 630 \\ \hline 42 \\ - 42 \\ \hline \underline{X} \end{array}$$

(e) $772 \div 7$

Ans. (e)

$$\begin{array}{r} 100 \\ 7 \overline{)772} \\ - 770 \\ \hline \underline{2} \end{array}$$

(f) $639 \div 13$

Ans. (f)

$$\begin{array}{r} 49 \\ 13 \overline{)639} \\ \underline{-520} \\ 119 \\ \underline{-117} \\ \underline{2} \end{array}$$

16. Isha has Rs 100 with her. She wants to buy petrol. One litre of petrol costs Rs. 47. ow How many litres can she buy?

Ans. Money with Isha = Rs. 1000

Cost of one litre = Rs. 47

Litres of petrol she can buy = $1000 \div 47 = 21$ (Quotient), 13 (Remainder)

$$\begin{array}{r} 21 \\ 47 \overline{)1000} \\ \underline{-940} \\ 60 \\ \underline{-47} \\ \underline{13} \end{array}$$

17. If Isha comes to your city, how much petrol can she buy with the same money?

Ans. Money left with Isha = Rs. 1000

Cost of 1 litres of petrol in the city = Rs. 50

Litres of petrol she can buy = $1000 \div 50 = 20$

Isha can buy 20 litres of petrol for the same money.

18. 576 books are to be packed in boxes. If one box has 24 books, how many boxes are needed?

Ans. Total number of books = 576

Number of books per box = 24

Number of boxes needed or packing = $576 \div 24 = 24$

$$\begin{array}{r} 24 \\ 24 \overline{)576} \\ \underline{-48} \\ 96 \\ \underline{-96} \\ \text{X} \\ \hline \end{array}$$

19. 836 people are watching a movie in a hall. If the hall has 44 rows, how many people can sit in 1 row?

Ans. Number of people watching a movie = 836

Number of rows = 44

Number of people sitting in 1 row = $836 \div 44 = 19$

$$\begin{array}{r} 19 \\ 44 \overline{)836} \\ \underline{-44} \\ 396 \\ \underline{-396} \\ \text{X} \\ \hline \end{array}$$

20. A gardener bought 458 apples trees. He wants to plant 15 trees in each row. How many rows can he plant?

Ans. Number of trees bought = 458

Number of trees planted in 1 row = 15

Number of rows = $458 \div 15$

$$\begin{array}{r} 30 \\ 15 \overline{)458} \\ \underline{-450} \\ 8 \\ \hline \end{array}$$

We get 30 as quotient and 8 as remainder.

Hence, he can plant in 30 rows and 8 trees are left over.

21. Shyamli bought a battery. She road on it 'Life: 2000 hours'. She uses it throughout the day and the night. How many days will the battery run?

Ans. Life of battery = 2000 hours

The number of days the battery will run = $2000 \div 24$

$$\begin{array}{r} 83 \\ 24 \overline{)2000} \\ \underline{-192} \\ 80 \\ \underline{-72} \\ 8 \\ \hline \end{array}$$

We get 83 as quotient and 8 as remainder. Hence, the battery will run for 83 days.

22. A tank is full of 300 L of water. How much water will be filled in 25 tanks? If 15 buckets can be filled with one tank of water, how many buckets all can be filled with the water in 25 tanks?

Ans. Capacity of water tank = 300 L

25 tanks can be filled with (25×300) L i.e. 7500 L of water.

Number of buckets that can be filled with 1 tank = 15

Number of buckets that can be filled with 25 tanks = $(15 \times 25) = 375$

23. There are 28 laddoos in 1 kg. How many laddoos will be there in 12 kg? If 16 laddoos can be packed in 1 box, how many boxes are needed to pack all these laddoos?

Ans. Number of laddoos in 1 kg = 28

Number of laddoos in 12 kg = $28 \times 12 = 336$

Total number of laddoos = 336

Number of laddoos packed in 1 box = 16

Number of boxes needed for packing = $336 \div 16 = 21$

$$\begin{array}{r} 21 \\ 16 \overline{)336} \\ \underline{-32} \\ 16 \\ \underline{-16} \\ X \\ \underline{\quad} \end{array}$$

24. There are 26 rooms in a school. Each room has 4 plant. If each plant needs 2 cups of water, how much water do we need for all the plants?

Ans. Number of rooms in a school = 26

Number of plants per room = 4

Total number of plants = $26 \times 4 = 104$

Water needed for each plant = 2 cups

Water needed for 104 plants = $104 \times 2 = 208$ cups

25. Do these divisions. Check your result by multiplication.

(a) $438 \div 9$

Ans. (a)

$$\begin{array}{r} 48 \\ 9 \overline{)438} \\ \underline{-36} \\ 78 \\ \underline{-72} \\ 6 \\ \underline{\quad} \end{array}$$

Check: $9 \times 48 + 6 = 432 + 6 = 438$

(b) $3480 \div 12$

Ans. (b)

$$\begin{array}{r}
 90 \\
 6 \overline{)678} \\
 \underline{-6} \\
 7 \\
 \underline{-6} \\
 18 \\
 \underline{-18} \\
 0
 \end{array}$$

Check: $113 \times 6 + 0 = 678$

(f) 2475×11

Ans. (f)

$$\begin{array}{r}
 225 \\
 11 \overline{)2475} \\
 \underline{-22} \\
 27 \\
 \underline{-22} \\
 55 \\
 \underline{-55} \\
 \underline{X}
 \end{array}$$

Check: $225 \times 11 + 0 = 2475$

26. Solve the given sums and colour the answers in the grid given below:

21×16	15×7	93×2	10×10
26×26	77×10	50×10	59×7
31×19	85×30	64×42	3200×40
19×3	248×8	432×18	729×9
825×5	221×13	576×12	288×4
869×11	847×7	981×3	475×19

Ans.

$21 \times 16 = 336$	$15 \times 7 = 105$	$93 \times 2 = 186$	$10 \times 10 = 100$
$26 \times 26 = 676$	$77 \times 10 = 770$	$50 \times 10 = 500$	$59 \times 7 = 413$
$31 \times 19 = 589$	$85 \times 30 = 2550$	$64 \times 42 = 2688$	$3200 \times 40 = 80$
$19 \times 3 = 57$	$248 \times 8 = 31$	$432 \times 18 = 24$	$729 \times 9 = 81$
$825 \times 5 = 165$	$221 \times 13 = 17$	$576 \times 12 = 48$	$288 \times 4 = 72$
$869 \times 11 = 79$	$847 \times 7 = 121$	$981 \times 3 = 327$	$475 \times 19 = 25$

Let us colour the given grid as desired:

545	110	434	642	709	623	919	341	72	168
984	165	561	608	236	513	529	62	259	905
709	907	367	632	336	121	492	178	431	475
165	806	584	186	100	589	72	717	248	676
624	80	105	24	165	17	85	770	126	500
247	997	485	2688	81	80	48	901	327	121
742	427	756	531	79	2550	347	1001	314	57
945	1000	687	854	1200	999	24	3126	918	53
109	799	845	1999	864	955	123	1234	678	56
549	459	614	1864	834	559	900	1111	268	171