

3.Multiplication

LET'S RECOLLECT

(1) Multiply the following:

(a) $438 \times 5 = 2190$

(b) $32 \times 56 = 1792$

(c) $202 \times 3 = 606$

(d) $6 \times 10 = 60$

(e) $7 \times 100 = 700$

(f) $8 \times 1000 = 8000$

(2) Fill in the blanks.

(a) $198 \times 1 = \underline{198}$ (b) $587 \times \underline{0} = 0$

(c) $34 \times 2 \times 7 = 7 \times \underline{2} \times 34$

(3) A container can hold 450 litres of water. How many litres of water can 7 such containers hold?

Sol- Capacity of one container = 450 litres

\therefore Capacity of 7 such containers = $450 \times 7 = 3150$ litres.

PRACTICE EXERCISE 3.1

1. Multiply by breaking up a number.

(a) $14 \times 3 = (10 + 4) \times 3 = 10 \times 3 + 4 \times 3 = 30 + 12 = 42$

(b) $7 \times 8 = 7 \times (10 - 2) = 7 \times 10 - 7 \times 2 = 70 - 14 = 56$

(c) $6 \times 9 = 6 \times (10 - 1) = 6 \times 10 - 6 \times 1 = 60 - 6 = 54$

(d) $15 \times 4 = (10 + 5) \times 4 = (10 \times 4) + (5 \times 4) = 40 + 20 = 60$

(e) $12 \times 6 = (10 + 2) \times 6 = (10 \times 6) + (2 \times 6) = 60 + 12 = 72$

2. Double the 6 times table to find these products.

(a) $5 \times 12 = 5 \times 6 \times 2 = 60$

(b) $6 \times 12 = 6 \times 6 \times 2 = 72$

(c) $8 \times 12 = 8 \times 6 \times 2 = 96$

(d) $9 \times 12 = 9 \times 6 \times 2 = 108$

3. Double the 9 times table to find these products.

(a) $4 \times 18 = 4 \times 9 \times 2 = 72$

(b) $3 \times 18 = 3 \times 9 \times 2 = 54$

(c) $7 \times 18 = 7 \times 9 \times 2 = 126$

(d) $2 \times 18 = 2 \times 9 \times 2 = 36$

PRACTICE EXERCISE 3.2

(1) Find the products.

(a) $143 \times 7 = 1001$

Sol-
$$\begin{array}{r} 143 \\ \times 7 \\ \hline 1001 \end{array}$$

(b) $167 \times 22 = 3674$

Sol-
$$\begin{array}{r} 167 \\ \times 22 \\ \hline 334 \\ + 3340 \\ \hline 3674 \end{array}$$

(c) $111 \times 15 = 1665$

Sol-
$$\begin{array}{r} 111 \\ \times 15 \\ \hline 555 \\ + 1110 \\ \hline 1665 \end{array}$$

(d) $224 \times 18 = 4032$

Sol-
$$\begin{array}{r} 224 \\ \times 18 \\ \hline 1792 \\ + 2240 \\ \hline 4032 \end{array}$$

(e) $119 \times 23 = 2737$

Sol-
$$\begin{array}{r} 119 \\ \times 23 \\ \hline 357 \\ + 2380 \\ \hline 2737 \end{array}$$

(f) $654 \times 14 = 9156$

Sol-
$$\begin{array}{r} 654 \\ \times 14 \\ \hline 2616 \\ + 6540 \\ \hline 9156 \end{array}$$

(g) $125 \times 51 = 6375$

Sol-
$$\begin{array}{r} 125 \\ \times 51 \\ \hline 6375 \end{array}$$

$$\begin{array}{r} \underline{\times 51} \\ 125 \\ + 6250 \\ \hline 6375 \end{array}$$

(h) $321 \times 11 = 3531$

Sol- 321

$$\begin{array}{r} \underline{\times 11} \\ 321 \\ + 3210 \\ \hline 3531 \end{array}$$

(i) $234 \times 16 = 3744$

Sol- 234

$$\begin{array}{r} \underline{\times 16} \\ 1404 \\ + 2340 \\ \hline 3744 \end{array}$$

(j) $198 \times 34 = 1386$

Sol- 198

$$\begin{array}{r} \underline{\times 34} \\ 792 \\ + 594 \\ \hline 1386 \end{array}$$

PRACTICE EXERCISE 3.3

(1) Estimate the product by rounding off to the nearest tens.

(a) $4351 \times 2 = 8702$

Sol- 4351

 $\times 2$
 8702

(b) $5612 \times 3 = 16,836$

Sol- 5612

 $\times 3$
 16836

(c) $7903 \times 5 = 39,515$

Sol- 7903

 $\times 5$
 39515

(d) $3452 \times 9 = 31,068$

Sol- 3452

 $\times 9$
 31068

(e) $6790 \times 43 = 2,91,970$

Sol- 6790
 $\times 43$
 20370
+ 271600
 291970

(f) $9821 \times 12 = 1,17,852$

Sol- 9821
 $\times 12$
 117852

(g) $5631 \times 23 = 1,29,513$

Sol- 5631
 $\times 23$
 16893
+ 112620
 129513

(h) $8967 \times 15 = 1,34,505$

Sol- 8967
 $\times 15$

134505

(i) $2307 \times 45 = 1,03,815$

Sol- 2307

$$\begin{array}{r} \times 45 \\ \hline \end{array}$$

11535

$$\begin{array}{r} \times 45 \\ \hline 11535 \\ + 92280 \\ \hline \end{array}$$

103815

(j) $6548 \times 18 = 1,17,864$

Sol- 6548

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

117864

PRACTICE EXERCISE 3.4

(1) Estimate the product by rounding off to the nearest tens.

(a) 144×37

On rounding off 144 to the nearest tens, we get 140.

On rounding off 37 to the nearest tens, we get 40.

So, estimated product = $140 \times 40 = 5600$

(b) 89×78

On rounding off 89 to the nearest tens, we get 90.

On rounding off 78 to the nearest tens, we get 80.

So, estimated product = $90 \times 80 = 7200$

(c) 233×171

On rounding off 233 to the nearest tens, we get 230.

On rounding off 171 to the nearest tens, we get 170.

So, estimated product = $230 \times 170 = 39,100$

(d) 766×534

On rounding off 766 to the nearest tens, we get 770.

On rounding off 534 to the nearest tens, we get 530.

So, estimated product = $770 \times 530 = 4,08,100$

(2) Estimate the product by rounding off to the nearest hundreds.

(a) 455×147

Sol- $455 \rightarrow 500$

$147 \rightarrow 100$

So, estimated product = 500×100

= 50,000

(b) 926×818

Sol- $926 \rightarrow 900$

$818 \rightarrow 800$

So, estimated product = 900×800

= 7,20,000

(c) 623×789

Sol- $623 \rightarrow 600$

$789 \rightarrow 800$

So, estimated product = 600×800

= 3,50,000

(d) 690×543

Sol- $690 \rightarrow 700$

$543 \rightarrow 500$

So, estimated product = 700×500

= 4,80,000

(3) A company packs 4723 bolts in a carton. Find the number of bolts in 16 such cartons.

Sol- Number of bolts in 1 carton = 4723

∴ Number of bolts in 16 cartons = $4723 \times 16 = 75,568$

The number of bolts in 16 cartons is 75,568.

(4) An aeroplane covers 1214 kilometres in an hour. How many kilometres will it cover in 15 hours?

Sol- Distance covered in 1 hour = 1214

Distance covered in 15 hour = $1214 \times 15 = 18,210$

The distance covered in 15 hours is 18,210km.

MCQs

Tick (✓) the correct answer.

(1) Estimate the product of 289×144 to the nearest tens.

- (a) 40600 ✓
- (c) 39200
- (b) 42000
- (d) 43500

(2) If the cost of a tea set is Rs595, what is the cost of 5 tea sets?

- (a) Rs590
- (c) Rs600
- (b) Rs1000
- (d) Rs2975 ✓

(3) Find the product of 1453×4 .

- (a) 9873
- (c) 1258 ✓
- (b) 5812
- (d) 9867

(4) When multiplying a number by 10,000, we add

- (a) three zeros at the end of the product.
- (c) four zeros at the end of the product. ✓
- (b) three zeros at the beginning of the product.
- (d) four zeros at the beginning of the product.

(5) Find the product of the smallest four-digit number and the greatest two-digit number.

- (a) 99000 ✓
- (c) 1000
- (b) 9900
- (d) 9000

Answer:

1. (a) 2. (d) 3. (b) 4. (c) 5. (a)

Work It Out

1. Write the 13 times table by breaking up numbers. Two have been done as examples.

$$(a) 1 \times 13 = 1 \times (10 + 3) = (1 \times 10) + (1 \times 3) = 10 + 3 = 13$$

$$(b) 2 \times 13 = 2 \times (10+3) = (2 \times 10) + (2 \times 3) = 20 + 6 = 26$$

$$(c) 3 \times 13 = 3 \times (10 + 3) = (3 \times 10) + (3 \times 3) = 30 + 9 = 39$$

$$(d) 4 \times 13 = 4 \times (10 + 3) = (4 \times 10) + (4 \times 3) = 40 + 12 = 52$$

$$(e) 5 \times 13 = 5 \times (10 + 3) = (5 \times 10) + (5 \times 3) = 50 + 15 = 65$$

$$(f) 6 \times 13 = 6 \times (10 + 3) = (6 \times 10) + (6 \times 3) = 60 + 18 = 78$$

$$(g) 7 \times 13 = 7 \times (10 + 3) = (7 \times 10) + (7 \times 3) = 70 + 21 = 91$$

$$(h) 8 \times 13 = 8 \times (10 + 3) = (8 \times 10) + (8 \times 3) = 80 + 24 = 104$$

$$(i) 9 \times 13 = 9 \times (10 + 3) = (9 \times 10) + (9 \times 3) = 90 + 27 = 117$$

$$(j) 10 \times 13 = 10 \times (10 + 3) = (10 \times 10) + (10 \times 3) = 100 + 30 = 130$$

2. Double the 8 times table to find the following products:

$$(a) 3 \times 16 = 3 \times 8 \times 2 = 48$$

$$(b) 5 \times 16 = 5 \times 8 \times 2 = 80$$

$$(c) 7 \times 16 = 7 \times 8 \times 2 = 112$$

$$(d) 9 \times 16 = 9 \times 8 \times 2 = 144$$

3. Find the product.

$$(a) 345 \times 7 = 2,415$$

$$\begin{array}{r} \text{Sol- } 345 \\ \times 7 \\ \hline 2415 \end{array}$$

$$(b) 756 \times 5 = 3,780$$

$$\begin{array}{r} \text{Sol- } 756 \\ \times 5 \\ \hline 3780 \end{array}$$

$$(c) 678 \times 23 = 15,594$$

$$\begin{array}{r} \text{Sol- } 678 \\ \times 23 \\ \hline 2034 \\ + 13560 \\ \hline 15594 \end{array}$$

$$(d) 134 \times 45 = 6,030$$

$$\begin{array}{r} \text{Sol- } 134 \\ \times 45 \\ \hline 670 \\ + 5360 \\ \hline 6030 \end{array}$$

(e) $1876 \times 4 = 7,504$

Sol- 1876
$$\begin{array}{r} \times 4 \\ \hline 7504 \end{array}$$

(f) $2875 \times 3 = 8,625$

Sol- 2875
$$\begin{array}{r} \times 3 \\ \hline 8625 \end{array}$$

(g) $7654 \times 15 = 1,14,810$

Sol- 7654
$$\begin{array}{r} \times 15 \\ \hline 114810 \end{array}$$

(h) $5439 \times 31 = 1,68,609$

Sol- 5439
$$\begin{array}{r} \times 31 \\ \hline 5439 \\ + 163170 \\ \hline 168609 \end{array}$$

4. Estimate the product to the nearest tens.

(a) 746×243

On rounding off 746 to the nearest tens, we get 750.

On rounding off 243 to the nearest tens, we get 240.

So, estimated product = $750 \times 240 = 1,80,000$

(b) 88×74

On rounding off 88 to the nearest tens, we get 90.

On rounding off 74 to the nearest tens, we get 70

So, estimated product = $90 \times 70 = 6,300$

5. Estimate the product to the nearest hundreds.

(a) 286×456

On rounding off 286 to the nearest hundreds, we get 300.

On rounding off 456 to the nearest hundreds, we get 500.

So, estimated product = $300 \times 500 = 1,50,000$

(b) 134×145

On rounding off 134 to the nearest tens, we get 100.

On rounding off 145 to the nearest tens, we get 100.

So, estimated product = $100 \times 100 = 10,000$

6. Arjun plans a trip to Kerala. He rents a house at a cost of a325 per day. If he stays in the house for 1 week, how much money does he need to pay as rent? (Hint: 1 week = 7 days)

Sol- Rent of the house per day = Rs325

Arjun stays there for =1 week or 7 days.

So, money he needs to pay = $\text{Rs}325 \times 7 = \text{Rs}2275$.

7. There are 25 men working at a construction site. The contractor pays a 1349 as salary to each of them. How much money does the contractor have to pay as the total salary?

Sol- Salary of each worker = Rs1349

\therefore Salary of 25 such workers = $\text{Rs}1349 \times 25 = \text{Rs}33,725$

The contractor have to pay Rs33,725 as the total salary.

8. Rahul has a collection of 4321 stamps in an album. He has 17 such albums. How many stamps in all has he collected?

Sol- Number of stamps in one album = 4321 the total number of stamps he collected in 17 such albums = $4321 \times 17 = 73,457$

So, Rahul collected 73,457 stamps in all.

9. Rehaan's father pays an electricity bill of a1269 per month. How much does he have to pay for a year? (Hint 1 year = 12 months)

Sol- Electricity bill for one month = Rs1269

\therefore Electricity bill for 1 year or 12 months = $\text{Rs}1269 \times 12 = \text{Rs}15,228$

Rehaan's father pays an electricity bill of Rs15,228 for a year.