2. Fill in the boxes :

Ans.
(a) $325 \times 10 = \mathbf{3250}$
(b) $538 \times 10 = \mathbf{5380}$
(c) $2053 \times 30 = \mathbf{61590}$
(d) $3448 \times 40 = \mathbf{137920}$
(e) $350 \times 400 = \mathbf{140000}$
(f) $544 \times 500 = \mathbf{272000}$
(g) $1524 \times 300 = \mathbf{457200}$
(h) $3172 \times 300 = \mathbf{951600}$
(i) $248 \times 2000 = \mathbf{496000}$
(j) $542 \times 1000 = \mathbf{542000}$
(k) $232 \times 4000 = \mathbf{928000}$
(l) $267 \times 3000 = \mathbf{801000}$
(m) $\mathbf{634} \times 10 = 6340$
(n) $\mathbf{255} \times 100 = 25500$
(o) $325 \times \mathbf{100} = 32500$
(p) $418 \times \mathbf{1000} = 418000$

3. By using suitable grouping find the product of each of the following :

Ans.
(a) $3 \times (15+4)$
$= 3 \times 19$
$= 57$

```
 1 9
×  3
 5 7
```

(b) $5 \times (25+18)$
$= 5 \times 43$
$= 215$

```
 4 3
×  5
2 1 5
```

(c) $18 \times (7+4)$
$= 18 \times 11$
$= 198$

```
  1 8
×  1 1
  1 8
1 8 0
1 9 8 0
```

(d) $25 \times (30+25)$
$= 25 \times 55$
$= 1375$

```
  5 5
×  2 5
  2 7 5
1 1 0 0
1 3 7 5
```

(e) $7 \times (12-4)$
$= 7 \times 8$
$= 56$

```
  7
×  8
  5 6
```

(f) $12 \times (15-8)$
$= 12 \times 7$
$= 84$

```
  1 2
×  7
  8 4
```

(g) $21 \times (25-15)$
$= 21 \times 10$
$= 210$

```
  2 1
×  1 0
  0 0
2 1 0
2 1 0
```

(h) $18 \times (30-13)$
$= 18 \times 17$
$= 306$

```
  1 8
×  1 7
1 2 6
1 8 0
3 0 6
```

(i) $5 \times (4+8)$
$= 5 \times 12$
$= 60$

```
  1 2
×  5
  6 0
```

(j) $7 \times (15+8)$
$= 7 \times 23$
$= 161$

```
  2 3
×  7
1 6 1
```

(k) $(12+10) \times 15$
$= 22 \times 15$
$= 330$

```
  2 2
×  1 5
1 1 0
2 2 0
3 3 0
```

(l) $(25+12) \times 30$
$= 37 \times 30$
$= 1110$

```
  3 7
×  0 0
  0 0
1 1 1 0
1 1 1 0
```

4. Find the product of three numbers :

Ans.
(a) 4, 2, 5
$= 4 \times 2 \times 5$

```
=   4        ⇒    8
  × 2             × 5
    8             4 0
```

So, $4 \times 2 \times 5 = 40$

(b) 6, 4, 12
$= 6 \times 4 \times 12$

```
=   6        ⇒   2 4
  × 4           × 1 2
  2 4           4 8
                2 4 0
                2 8 8
```

So, $6 \times 4 \times 12 = 288$

(c) 7, 10, 5
$= 7 \times 10 \times 5$

```
=   7        ⇒   7 0
  × 1 0         × 5
  0 0           3 5 0
  7 0
  7 0
```

So, $7 \times 10 \times 5 = 350$

(d) 12, 11, 4
= 12 × 11 × 4

$$= \begin{array}{r} 12 \\ \times\ 11 \\ \hline 12 \\ 120 \\ \hline 132 \end{array} \Rightarrow \begin{array}{r} 132 \\ \times\ 4 \\ \hline 528 \end{array}$$

So, 12 × 11 × 4 = 528

(e) 15, 21, 6
= 15 × 21 × 6

$$= \begin{array}{r} 15 \\ \times\ 21 \\ \hline 15 \\ 300 \\ \hline 315 \end{array} \Rightarrow \begin{array}{r} 315 \\ \times\ 6 \\ \hline 1890 \end{array}$$

So, 12 × 21 × 6 = 1890

(f) 17, 4, 20
= 17 × 4 × 20

$$= \begin{array}{r} 17 \\ \times\ 4 \\ \hline 68 \end{array} \Rightarrow \begin{array}{r} 68 \\ \times\ 20 \\ \hline 00 \\ 136 \\ \hline 1360 \end{array}$$

So, 17×4×20 = 1360

(g) 5, 8, 30
= 5 × 8 × 30

$$= \begin{array}{r} 5 \\ \times\ 8 \\ \hline 40 \end{array} \Rightarrow \begin{array}{r} 40 \\ \times\ 30 \\ \hline 00 \\ 1200 \\ \hline 1200 \end{array}$$

So, 5×8×30 = 1200

(h) 16, 25, 10
= 16 × 25 × 10

$$= \begin{array}{r} 16 \\ \times\ 25 \\ \hline 80 \\ 320 \\ \hline 400 \end{array} \Rightarrow \begin{array}{r} 400 \\ \times\ 10 \\ \hline 000 \\ 4000 \\ \hline 4000 \end{array}$$

So, 16×25×10 = 4000

(i) 18, 22, 16
= 18 × 22 × 16

$$= \begin{array}{r} 18 \\ \times\ 22 \\ \hline 36 \\ 360 \\ \hline 396 \end{array} \Rightarrow \begin{array}{r} 396 \\ \times\ 16 \\ \hline 2376 \\ 3960 \\ \hline 6336 \end{array}$$

So, 18×22×16 = 6336

5. Fill in the blanks :

Ans. (a) 3760 × **25** = 25 × 3760
(b) 5633 × **0** = 0
(c) 5555 × **1** = 5555
(d) 5200 × 10000 = **52000000**
(e) 102 × 5000 = **510000**
(f) 702 × 10000 = **7020000**

6. Find the value of :

Ans. (a) 7 × 19 × 85
= **11305**

$$\begin{array}{r} 7 \\ \times\ 19 \\ \hline 133 \\ \times\ 85 \\ \hline 665 \\ 10640 \\ \hline 11305 \end{array}$$

(b) 6 × 29 × 44
= **7656**

$$\begin{array}{r} 6 \\ \times\ 29 \\ \hline 174 \\ \times\ 44 \\ \hline 696 \\ 6960 \\ \hline 7656 \end{array}$$

(c) 45 × 34 × 12
= **18360**

$$\begin{array}{r} 45 \\ \times\ 34 \\ \hline 180 \\ 1350 \\ \hline 1530 \\ \times\ 12 \\ \hline 3060 \\ 15300 \\ \hline 18360 \end{array}$$

(d) 3 × 200 × 100
= **60000**

$$\begin{array}{r} 3 \\ \times\ 200 \\ \hline 600 \\ \times\ 100 \\ \hline 000 \\ 0000 \\ 60000 \\ \hline 60000 \end{array}$$

(e) 125 × 15 × 32
= **160000**

$$\begin{array}{r} 125 \\ \times\ 15 \\ \hline 625 \\ 1250 \\ \hline 1875 \\ \times\ 32 \\ \hline 3750 \\ 56250 \\ \hline 60000 \end{array}$$

(f) $225 \times 100 \times 25$
$= \mathbf{562500}$

$$\begin{array}{r} 225 \\ \times\ 100 \\ \hline 000 \\ 0000 \\ \hline 22500 \\ \times\ 25 \\ \hline 112500 \\ 450000 \\ \hline 562500 \end{array}$$

Exercise-11

Solve the following :

Ans. **1.** $8 \times 9 - 5 \times 6$
$= 72 - 30 = 42$ **Ans**

2. $8 \times 8 - 4 \times 7 + 3 \times 4$
$= 64 - 28 + 12$
$= 36 + 12 = 48$ **Ans**

3. $25 \times 5 - 13 \times 9 + 7 \times 7$
$= 125 - 117 + 49$
$= 8 + 49 = 57$ **Ans**

4. $40 \times 5 - 14 \times 4 + 6 \times 2$
$= 200 - 56 + 12$
$= 144 + 12 = 156$ **Ans**

5. $19 \times 5 - 6 \times 7 - 4 \times 5$
$= 95 - 42 - 20$
$= 95 - 62 = 33$ **Ans**

6. $16 \times 6 + 15 \times 5 - 18 \times 5$
$= 96 + 75 - 90$
$= 171 - 90 = 81$ **Ans**

7. $100 - 50 \times 3 + 125 - 4 \times 5$
$= 100 - 150 + 125 - 20$
$= 100 + 125 - 20$
$= 225 - 170 = 55$ **Ans**

8. $325 - 15 \times 6 - 4 \times 2 - 12 \times 5$
$= 325 - 90 - 8 - 60$
$= 325 - 158 = 167$ **Ans**

Exercise-12

Simplify :

1. $1240 \times 30 - 3170 + 1928 - 3070 + 80$
$= 37200 - 3170 + 1928 - 3070 + 80$
$= 37200 + 1928 + 80 - 3170 + 3070$
$= 39208 - 6240 = 32968$ **Ans**

2. $183 + 1694 - 275 + 18 \times 7 + 315$
$= 183 + 1694 - 275 + 126 + 315$
$= 183 + 1694 + 126 + 315 - 275$
$= 2318 - 275 = 2043$ **Ans**

3. $7654 - 3692 + 54 \times 9 - 18 \times 9$
$= 7654 - 3692 + 486 - 162$
$= 7654 + 486 - 3692 + 162$
$= 8140 - 3854 = 4286$ **Ans**

4. $4002 \times 8 - 6 + 10 - 508 + 388 - 52$
$= 32016 - 6 + 10 - 508 + 388 - 52$
$= 32016 + 10 + 388 - 6 + 508 + 52$
$= 32414 - 566 = 31848$ **Ans**

5. $314 \times 15 - 56 + 32 + 325 - 218$
$= 4710 - 56 + 32 + 325 - 215$
$= 4710 + 32 + 325 - 56 + 218$
$= 5067 - 274 = 4793$ **Ans**

6. $612 + 28 \times 5 - 650 + 402 + 2015$
$= 612 + 140 - 650 + 402 + 2015$
$= 612 + 140 + 402 + 2015 - 650$
$= 3169 - 650 = 2519$ **Ans**

7. $954 - 27 + 71 \times 5 + 40 \times 9 - 28$
$= 954 - 27 + 355 + 360 - 28$
$= 954 + 355 + 360 - 27 + 28$
$= 1669 - 55 = 1614$ **Ans**

8. $528 \times 48 - 13 \times 8 - 3250 + 2512$
$= 25344 - 104 - 3240 + 2512$
$= 25344 + 2512 - 104 - 3250$
$= 27856 - 3354 = 24502$ **Ans**

9. $408 \times 16 - 3150 + 2165 - 325 \times 4$
$= 6528 - 3150 + 2165 - 1300$
$= 6528 + 2165 - 3150 + 1300$
$= 8693 - 4450 = 4243$ **Ans**

10. $325 \times 8 - 12 - 15 + 28 - 46$
$= 2600 - 12 - 15 + 28 - 46$
$= 2600 + 28 - 12 + 46 + 15$
$= 2628 - 73 = 2555$ **Ans**

11. $328 \times 15 - 208 \times 4 + 8 - 12$
$= 4920 - 832 + 8 - 12$
$= 4920 + 8 - 832 + 12$
$= 4928 - 844 = 4084$ **Ans**

12. $15 - 10 + 12 + 8 \times 12 - 25$
$= 15 - 10 + 12 + 96 - 25$
$= 15 + 12 + 96 - 10 + 25$
$= 123 - 35 = 88$ **Ans**

13. $100 \times 5 - 212 + 75 \times 5 - 8 + 6$
$= 500 - 212 + 375 - 8 + 6$
$= 500 + 375 + 6 - 212 + 8$
$= 881 - 220 = 661$ **Ans**

14. $28 + 15 \times 8 - 12 + 4 \times 2$
$= 28 + 120 - 12 + 8$
$= 28 + 120 + 8 - 12$
$= 156 - 12 = 144$ **Ans**

15. $25 - 8 + 12 + 15 \times 3 - 4 \times 2$
$= 25 - 8 + 12 + 45 - 8$
$= 25 + 12 + 45 - 8 + 8$
$= 188 - 16 = 172$ **Ans**

Exercise-13

1. Multiply by using expanded notation :

Ans. (a) 325×42
$= 325 \times (40 + 2)$
$= 325 \times 40 + 325 \times 2$
$= 13000 + 650 = 13650$

(b) 488×68
$= 488 \times (60 + 8)$
$= 488 \times 60 + 488 \times 8$
$= 29280 + 3904 = 33184$

(c) 3432×65
$= 3432 \times (60+5)$
$= 3432 \times 60 + 3432 + 5$
$= 205920 + 17160 = 223080$

(d) 6436×87
$= 6436 \times (80 + 7)$
$= 6436 - 80 + 6436 \times 7$
$= 514880 + 45032 = 559932$

(e) 332×435
$= 332 \times 435$
$= 332 \times (400 + 30 + 5)$
$= 332 \times 400 + 332 \times 30 + 332 \times 5$
$= 132800 + 9960 + 1660 = 144420$

(f) 628×245
$= 628 \times (200 + 40 + 5)$
$= 628 \times 200 + 628 \times 40 + 628 \times 5$
$= 125600 + 25120 + 3140$
$= 153860$

(g) 1228×427
$= 1228 \times (400 + 20 + 7)$
$= 1228 \times 400 + 1228 \times 20 + 1228 \times 7$
$= 491200 + 24560 + 8596$
$= 524356$

(h) 2340×254
$= 2340 \times 200 + 2340 \times 50 + 2340 \times 4$
$= 468000 + 117000 + 9360$
$= 594360$

2. Multiply :

Ans.

a
$$\begin{array}{r} 434 \\ \times\ 38 \\ \hline 3472 \\ 13020 \\ \hline 16492 \end{array}$$

b
$$\begin{array}{r} 425 \\ \times\ 75 \\ \hline 2125 \\ 29750 \\ \hline 31875 \end{array}$$

c
$$\begin{array}{r} 4832 \\ \times\ 48 \\ \hline 38656 \\ 193280 \\ \hline 231936 \end{array}$$

d
$$\begin{array}{r} 2345 \\ \times\ 368 \\ \hline 18760 \\ 140700 \\ 703500 \\ \hline 862960 \end{array}$$

e
$$\begin{array}{r} 5345 \\ \times\ 386 \\ \hline 32070 \\ 427600 \\ 1603500 \\ \hline 2063170 \end{array}$$

f
$$\begin{array}{r} 2765 \\ \times\ 324 \\ \hline 11060 \\ 55300 \\ 829500 \\ \hline 895860 \end{array}$$

g
$$\begin{array}{r} 6845 \\ \times\ 678 \\ \hline 54760 \\ 479150 \\ 4107000 \\ \hline 4640910 \end{array}$$

h
$$\begin{array}{r} 5027 \\ \times\ 125 \\ \hline 25135 \\ 100540 \\ 502700 \\ \hline 628375 \end{array}$$

i
$$\begin{array}{r} 2008 \\ \times\ 205 \\ \hline 10040 \\ 00000 \\ 401600 \\ \hline 411640 \end{array}$$

j
$$\begin{array}{r} 1306 \\ \times\ 408 \\ \hline 10448 \\ 00000 \\ 522400 \\ \hline 532848 \end{array}$$

k
$$\begin{array}{r} 2207 \\ \times\ 315 \\ \hline 11035 \\ 22070 \\ 662100 \\ \hline 695205 \end{array}$$

l
$$\begin{array}{r} 2000 \\ \times\ 399 \\ \hline 18000 \\ 180000 \\ 600000 \\ \hline 798000 \end{array}$$

3. Find the product :

Ans.

(a)
$$\begin{array}{r} 532 \\ \times\ 32 \\ \hline 1064 \\ 15960 \\ \hline 17024 \end{array}$$

$\therefore\ 532 \times 32 = 17024$

(b)
$$\begin{array}{r} 4016 \\ \times\ 232 \\ \hline 8032 \\ 120480 \\ 803200 \\ \hline 931712 \end{array}$$

$\therefore\ 4016 \times 232 = 931712$

(c)
$$\begin{array}{r} 472 \\ \times\ 68 \\ \hline 3776 \\ 25620 \\ \hline 32096 \end{array}$$

$\therefore\ 472 \times 68 = 32096$

(d)
$$\begin{array}{r} 2120 \\ \times\ 400 \\ \hline 0000 \\ 00000 \\ 848000 \\ \hline 848000 \end{array}$$

$\therefore\ 2120 \times 400 = 848000$

(e)
$$\begin{array}{r} 474 \\ \times\ 94 \\ \hline 2696 \\ 60660 \\ \hline 63356 \end{array}$$

$\therefore\ 674 \times 94 = 63356$

(f)
$$\begin{array}{r} 3005 \\ \times\ 205 \\ \hline 15025 \\ 00000 \\ 601000 \\ \hline 616025 \end{array}$$

$\therefore\ 3005 \times 205 = 616025$

(g)
$$\begin{array}{r} 352 \\ \times\ 68 \\ \hline 2816 \\ 21120 \\ \hline 23936 \end{array}$$

$\therefore\ 352 \times 68 = 23936$

(h)
$$\begin{array}{r} 3025 \\ \times\ 201 \\ \hline 3025 \\ 00000 \\ 605000 \\ \hline 608025 \end{array}$$

$\therefore\ 3025 \times 201 = 608025$

(i)
$$\begin{array}{r} 3472 \\ \times\ 152 \\ \hline 6944 \\ 173600 \\ 347200 \\ \hline 527744 \end{array}$$

$\therefore$ 3472×152

(j)
$$\begin{array}{r} 2702 \\ \times\ 231 \\ \hline 2702 \\ 81060 \\ 540400 \\ \hline 624162 \end{array}$$

$\therefore$ 2702×231

(k)
$$\begin{array}{r} 1802 \\ \times\ 435 \\ \hline 9010 \\ 54060 \\ 720800 \\ \hline 783870 \end{array}$$

$\therefore$ $1802 \times 435 = 783870$

(l)
$$\begin{array}{r} 3392 \\ \times\ 211 \\ \hline 3392 \\ 33920 \\ 678400 \\ \hline 715712 \end{array}$$

$\therefore$ $3392 \times 211 = 715712$

4. Find the product of the following :

Ans (a) $68 \times 7 \times 15$
$= 476 \times 15 = 7140$

(b) $45 \times 12 \times 8 \times 10$
$= 540 \times 8 \times 10$
$= 4320 \times 10 = 43200$

(c) $18 \times 8 \times 12 \times 3$
$= 144 \times 12 \times 3$
$= 1728 \times 3 = 5184$

(d) $18 \times 42 \times 53 \times 2$
$= 756 \times 53 \times 2$
$= 40068 \times 2 = 80136$

(e) $15 \times 7 \times 15 \times 4$
$= 105 \times 15 \times 4$
$= 1575 \times 4 = 6300$

(f) $54 \times 3 \times 18 \times 7$
$= 162 \times 18 \times 7$
$= 2916 \times 7 = 20412$

(g) $54 \times 4 \times 18 \times 6$
$= 216 \times 18 \times 6$
$= 3888 \times 6 = 23328$

(h) $45 \times 8 \times 4 \times 15$
$= 360 \times 4 \times 15$
$= 1440 \times 15 = 21600$

5. Find the product :

Ans.
$$\begin{array}{r} 425 \\ \times\ 248 \\ \hline 3400 \\ 17000 \\ 85000 \\ \hline 105400 \end{array}$$

$$\begin{array}{r} 682 \\ \times\ 345 \\ \hline 3410 \\ 27280 \\ 204600 \\ \hline 235290 \end{array}$$

Exercise-14

Solve the following word problems :

1. A bus can carry 45 passengers in one trip. If it makes 4 trips in a day, how many passengers will it carry in 25 days?

Sol. The number of passengers carried in one day $= 45 \times 4$

The numbes of passengers carried in 25 days $= 45 \times 4 \times 25$

$$\begin{array}{r} 45 \\ \times\ 4 \\ \hline 180 \end{array}$$

$$\begin{array}{r} 180 \\ \times\ 25 \\ \hline 900 \\ 360\times \\ \hline 4500 \end{array}$$

$\therefore$ The bus will carry 4500 passengers in 25 days.

2. There are 15 pens in one packet. 30 packets are packed in one box. A distributor has 65 such boxes ready for distribution. How many pens does he have for distribution?

Sol. The number of pens in one box
$= 15 \times 30$

The number of pens available for distribution $= 15 \times 20 \times 65$

$$\begin{array}{r} 15 \\ \times\ 30 \\ \hline 00 \\ 450 \\ \hline 450 \end{array}$$

$$\begin{array}{r} 450 \\ \times\ 65 \\ \hline 2250 \\ 17000 \\ \hline 29250 \end{array}$$

$\therefore$ The distributor had 29250 pens for distribution.

3. A motor car can cover 250 km per day. How much distance will it cover in one year?

Sol. Distance covered in one day $= 250$ km

Distance to be covered in one year $= 250 \times 365$

$$\begin{array}{r} 250 \\ \times\ 365 \\ \hline 1250 \\ 15000 \\ 75000 \\ \hline 91250 \end{array}$$

$\therefore$ The motor car will cover the distance of 91250 km in one year.

4. 825 women and 900 men work in a factory. If each one earns ₹ 625 per month, find the total amount of money do they all earn in one month.

Sol. Total workers in the factory $= 825 + 900 = 1725$

Total amount of money earned in one month $= 1725 \times$ ₹ 625

$$\begin{array}{r} 1725 \\ \times\ 625 \\ \hline 8625 \\ 34500 \\ 1035000 \\ \hline 1078125 \end{array}$$

$\therefore$ 825 women and 900 men will earn ₹ 1078125 in one month.

5. The price of an almirah is ₹ 2425. Find the total price of 222 such almirahs.

Sol. The price of one almirah = ₹ 2425
Total price of 222 almirahs
= ₹ 2425 × 222

```
  2425
 × 222
 4850
48500
485000
538350
```

∴ 222 almirah will cost ₹ 538350

6. One packet contains 256 cards. How many cards are there in 98 such packets?

Sol. Cards in one packet = 256
Cords in 98 such packets
= 98 × 256

```
  256
 × 98
 2048
23040
25088
```

∴ In 98 packets there are 25088 cards.

7. A student reads 325 pages in a day. How many pages will he read in the month of April?

Sol. Number of pages read in a day = 325
Number of pages read in April = 325 × 30 pages

```
  325
 × 30
  000
 9750
 9750
```

∴ In the month of April the student will read 9750 pages

8. How many hours are there in 30 days?

Sol. Number of hours in a day = 24
Number of hours in 30 days = 24 × 30 hours

```
   30
 × 24
  120
  600
  720
```

∴ In 30 days there are 720 hours.

9. A man saves ₹ 2435 in one year. How much does he save in 9 years?

Sol. Savings during 1 year
= ₹ 2435
Savings during 9 years
= ₹ 2435 × 9

```
  2435
 × 9
 21915
```

∴ The man will save ₹ 21915 in 9 years.

10. The weight of a box containing books is 5 kg. How much will be the weight of 139 such boxes?

Sol. The weight of one box
= 5 kg
The wright of 139 boxes = 139 × 5

```
  139
 × 5
 695
```

∴ The weight of 139 boxes will be 695 kg

11. The monthly tuition fee of a student in a school is ₹ 145. Find the amount of tuition fee collected in a month from 435 students?

Sol. Tuition fee collect by a student = ₹ 145
Tution fee collected by 435 students = ₹ 145 × 435

```
  435
 × 145
 2175
17400
43500
63075
```

∴ The amount of tuition fee collected in a month from 435 students is ₹ 63075

12. A factory produces 1985 screws in a day. How many screws will it produce in 16 weeks, if every Friday is a holiday?

Sol. Screws produced in a day = 1985
Screws produced in a week = 1985 × 6

```
 1985
 × 6
11910
```

```
  11910
 × 16
 71460
119100
190560
```

Screws produced in a 16 weeks
= 1985 × 6 × 16

∴ In 16 weeks 190560 screws will be produced by the factory.

13. A shopkeeper has 68 tins of ghee in stock. If each tin weighs 15 kg find the total weight of ghee in stock.

Sol. Weight of 1 tin of ghee = 15kg
Weight of 68 tins of ghee = 68 × 15 kg

```
  68
 × 15
 340
 680
1020
```

∴ Total ghee in the stock will weigh 1020 kg.

14. Manoj reads 25 pages of a book in one hour daily. He reads for 8 hours and completes the reading of whole books in 26 days. Find the number of pages in the book.

Sol. Pages read by Manoj in 1 day = 25 × 8
Pages read by Manoj in 26 days
= 25 × 8 × 26

```
 25
 × 8
200
```

```
  200
 × 26
1200
4000
5200
```

∴ There are 5200 pages in the whole book.

15. A big table costs ₹ 995. How much 684 such tables will cost?

Sol. Cost of one table = ₹ 995

Cost of 684 such table
= ₹ 995 × 684

$\therefore$ 684 tables will cost ₹ 680580

```
  995
 ×684
 3980
 7960
5970
680580
```

16. An engine draws out 9648 litres of water in one hour. How many litres of water will it draw out in 9 hours?

Sol. Water drawn in one hour = 9648 litres

Water drawn in 9 hours
= 9648 × 9 litres

$\therefore$ The engine will draw 86832 litres of water in 9 hours.

```
 9648
  ×9
86832
```

17. A uniform set costs ₹ 876. What will be the costs of 496 such uniform sets?

Sol. Cost of a uniform set = ₹ 876

Cost of 496 such uniform sets = ₹ 876 × 496

The cost of 496 uniform sets is ₹ 434496.

```
  876
 ×496
 5256
 7884
350400
434496
```

18. One packet contains 289 sweets. How many sweets can be packed in 396 such packets?

Sol. Number of sweets in one packet = 289

Number of sweets in 396 packeds = 289 × 396

$\therefore$ 114444 sweets can be packed in packed in 396 packets.

```
  396
 ×289
 3564
31680
79200
114444
```

19. Mr John earns ₹ 9600 every month. How much will he earn in 7 years?

Sol. Money earned by Mr John in one year
= ₹ 9600 × 12

Money earned by him in 7 years
= ₹ 9600 × 12 × 7

```
 9600
  ×12
19200
96000
115200
```

```
 115200
    ×7
806400
```

Mr John will earn ₹ 806400 in 7 years.

20. A dealer purchased 496 horse toys. If the cost of one horse toy is ₹ 56, find the cost the total horse toys purchased.

Sol. Cost of horse toy = ₹ 56

Cost of 496 horse toys
= ₹ 56 × 496

$\therefore$ The cost of total horse toys purchased is ₹ 27776.

```
  496
  ×56
 2976
24800
27776
```

21. The weight of a sugar bag is 240 kg. Find the weight of 673 sugar bags.

Sol. The weight of a sugar bag = 240 kg

The weight of 673 sugar boys = 673 × 240 kg

$\therefore$ 673 sugar boys will weigh 161520 kg.

```
  673
 ×240
  000
 26920
134600
161520
```

22. The distance travelled by a bus in one hour is 72 km. How far it can travel in 235 hours?

Sol. Distance travelled in one hour = 75 km

Distance travelled in 235 hours = 235 × 72 km

$\therefore$ The bus can travel 16920 km in 235 hours.

```
  235
  ×72
  470
16450
16920
```

23. 1825 persons can sit in a cinema hall. How much persons can sit in 32 such cinema halls?

Sol. Persons in a cinema hall = 1825

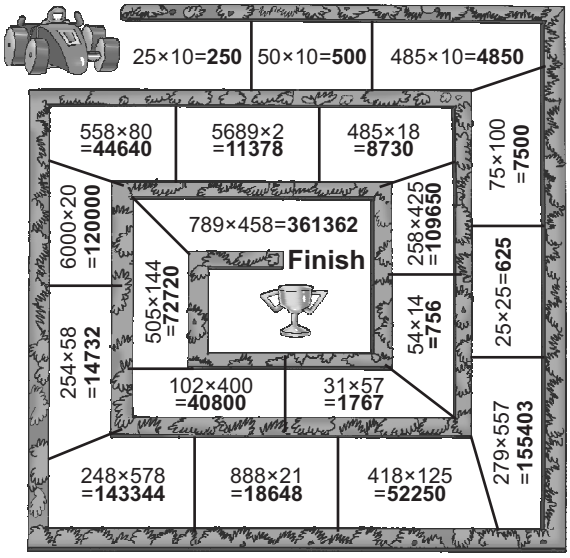
Persons in 32 such cinema halls = 1825 × 32

$\therefore$ 58400 persons can sit in 32 cinema halls.

```
 1825
  ×32
 3650
54750
58400
```

Worksheet

Complete the multiplication drill :



7 Division

Exercise-15

Divide using the method of repeated subtraction :

1. 8 by 2

Ans.
8
−2
6
−2
4
−2
2
−2
0

∴ $8 \div 2 = 4$

2. 6 by 2

Ans.
6
−2
4
−2
2
−2
0

∴ $6 \div 2 = 3$

3. 10 by 5

Ans.
9
−3
6
−3
3
−3
0

∴ $9 \div 3 = 3$

4. 9 by 3

Ans.
10
−5
5
−5
0

∴ $10 \div 5 = 2$

5. 12 by 4

Ans.
12
−4
8
−4
4
−4
0

6. 16 by 4

Ans.
16
−4
12
−4
8
−4
4
−4
0

∴ $16 \div 4 = 4$

7. 15 by 5

Ans.
15
−5
10
−5
5
−5
0

∴ $15 \div 5 = 3$

8. 18 by 9

Ans.
18
−9
9
−9
0

∴ $18 \div 9 = 2$

9. 10 by 2

Ans.
10
−2
8
−2
6
−2
4
−2
2
−2
0

∴ $10 \div 2 = 5$

10. 20 by 4

Ans.
20
−4
16
−4
12
−4
8
−4
4
−4
0

∴ $20 \div 4 = 5$

11. 21 by 7

Ans.
$$\begin{array}{r} 21 \\ -7 \\ \hline 14 \\ -7 \\ \hline 7 \\ -7 \\ \hline 0 \end{array}$$

$\therefore \quad 21 \div 7 = 3$

12. 25 by 5

Ans.
$$\begin{array}{r} 25 \\ -5 \\ \hline 20 \\ -5 \\ \hline 15 \\ -5 \\ \hline 10 \\ -5 \\ \hline 5 \\ -5 \\ \hline 0 \end{array}$$

$\therefore \quad 25 \div 5 = 5$

Exercise-16

1. **Fill in the blanks :**

Ans.
(a) $235 \div 1 = \mathbf{235}$ (b) $\mathbf{445} \div 1 = 445$
(c) $\mathbf{75} \div 75 = 1$ (d) $225 \div \mathbf{225} = 1$
(e) $0 \div 555 = \mathbf{0}$ (f) $135 \div 135 = \mathbf{1}$
(g) $125 \div 1 = \mathbf{125}$ (h) $1265 \div 1 = \mathbf{1265}$
(i) $120 \div 120 = \mathbf{1}$ (j) $1305 \div 1 = \mathbf{1305}$
(k) $215 \div 215 = \mathbf{1}$ (l) $485 \div 485 = \mathbf{1}$
(m) $15 \div 15 = \mathbf{1}$ (n) $548 \div \mathbf{1} = 548$
(o) $0 \div 65 = \mathbf{0}$ (p) $212 \div 212 = \mathbf{1}$
(q) $0 \div 81 = \mathbf{0}$ (r) $615 \div 615 = \mathbf{1}$

2. **Divide :**

Ans.
(a) $56 \div 8$

$$8\overline{)56}\,(7$$
$$\begin{array}{r} -56 \\ \hline \times \end{array}$$

$\therefore \quad 56 \div 8 = 7$

(b) $54 \div 9$

$$9\overline{)54}\,(6$$
$$\begin{array}{r} -54 \\ \hline \times \end{array}$$

$\therefore \quad 54 \div 9 = 6$

(c) $64 \div 8$

$$8\overline{)64}\,(8$$
$$\begin{array}{r} -64 \\ \hline \times \end{array}$$

$\therefore \quad 64 \div 8 = 8$

(d) $81 \div 9$

$$9\overline{)81}\,(9$$
$$\begin{array}{r} -81 \\ \hline \times \end{array}$$

$\therefore \quad 81 \div 9 = 9$

(e) $45 \div 15$

$$15\overline{)45}\,(3$$
$$\begin{array}{r} -45 \\ \hline \times \end{array}$$

$\therefore \quad 45 \div 15 = 3$

(f) $64 \div 16$

$$16\overline{)64}\,(4$$
$$\begin{array}{r} -64 \\ \hline \times \end{array}$$

$\therefore \quad 64 \div 16 = 4$

(g) $51 \div 17$

$$17\overline{)51}\,(3$$
$$\begin{array}{r} -51 \\ \hline \times \end{array}$$

$\therefore \quad 51 \div 17 = 3$

(h) $121 \div 121$

$$121\overline{)121}\,(1$$
$$\begin{array}{r} -121 \\ \hline \times \end{array}$$

$\therefore \quad 121 \div 121 = 1$

(i) $105 \div 15$

$$15\overline{)105}\,(7$$
$$\begin{array}{r} -105 \\ \hline \times \end{array}$$

$\therefore \quad 105 \div 15 = 7$

(j) $85 \div 17$

$$17\overline{)85}\,(5$$
$$\begin{array}{r} -85 \\ \hline \times \end{array}$$

$\therefore \quad 85 \div 17 = 5$

(k) $162 \div 18$

$$18\overline{)162}\,(9$$
$$\begin{array}{r} -162 \\ \hline \times \end{array}$$

$\therefore \quad 162 \div 18 = 9$

(l) $715 \div 11$

$$11\overline{)715}\,(65$$
$$\begin{array}{r} -66 \\ \hline 55 \\ -55 \\ \hline \times \end{array}$$

$\therefore \quad 715 \div 11 = 65$

(m) $434 \div 14$

$$14\overline{)434}\,(31$$
$$\begin{array}{r} -42 \\ \hline 14 \\ -14 \\ \hline \times \end{array}$$

$\therefore \quad 434 \div 14 = 31$

(n) $495 \div 45$

$$45\overline{)495}\,(11$$
$$\begin{array}{r} -45 \\ \hline 45 \\ -45 \\ \hline \times \end{array}$$

$\therefore \quad 495 \div 45 = 11$

(o) $567 \div 27$

$$27\overline{)567}\,(21$$
$$\begin{array}{r} -54 \\ \hline 27 \\ -27 \\ \hline \times \end{array}$$

$\therefore \quad 567 \div 27 = 21$

(p) $735 \div 35$

$$35\overline{)735}\,(21$$
$$\begin{array}{r} -70 \\ \hline 35 \\ -35 \\ \hline \times \end{array}$$

$\therefore \quad 735 \div 35 = 21$

3. **Divide and verify the answer :**

Ans.
(a) $91 \div 13$

$$13\overline{)91}\,(7$$
$$\begin{array}{r} -91 \\ \hline \times \end{array}$$

$Q = 7, R = 0$

Verification :

$91 = 13 \times 7$

$91 = 91$

Hence, verified

(b) $905 \div 14$

$$14\overline{)905}\,(64$$
$$\begin{array}{r} -84 \\ \hline 65 \\ -56 \\ \hline 9 \end{array}$$

$Q = 64, R = 9$

Verification :

$905 = 64 \times 14 + 1$

$905 = 896 + 9$

$905 = 905$

Hence, verified

(c) $120 \div 15$

$$15\overline{)120}\,(8$$
$$\begin{array}{r} -120 \\ \hline \times \end{array}$$

$Q = 8$

Verification :

$120 = 15 \times 8$

$120 = 120$

Hence, verified

(d) $704 \div 44$

$$44\overline{)704}\,(16$$
$$\begin{array}{r} -44 \\ \hline 264 \\ -264 \\ \hline \times \end{array}$$

$Q = 16$

Verification :

$704 = 44 \times 16$

$704 = 704$

Hence, verified

(e) $8652 \div 12$

$$12\overline{)8652}\,(721$$
$$\begin{array}{r} -84 \\ \hline 25 \\ -24 \\ \hline 12 \\ -12 \\ \hline \times \end{array}$$

$Q = 11, R = 0$

(f) $2832 \div 24$

$$24\overline{)2832}\,(118$$
$$\begin{array}{r} -24 \\ \hline 43 \\ -24 \\ \hline 192 \\ -192 \\ \hline \times \end{array}$$

$Q = 118$

Verification :
$969 = 88 \times 11 + 1$
$969 = 968 + 1$
$969 = 969$
Hence, verified

Verification :
$2832 = 118 \times 24$
$2832 = 2832$
Hence, verified

4. Divide and find the quotient and remainder :

Ans. (a) $957 \div 25$

$$\begin{array}{r} 25\overline{)957}\,(38 \\ -75\downarrow \\ \hline 207 \\ -207 \\ \hline 7 \end{array}$$

So, Q = 38, R = 7

(b) $838 \div 33$

$$\begin{array}{r} 33\overline{)838}\,(25 \\ -66\downarrow \\ \hline 178 \\ -165 \\ \hline 13 \end{array}$$

So, Q = 25, R = 13

(c) $977 \div 45$

$$\begin{array}{r} 45\overline{)977}\,(21 \\ -90\downarrow \\ \hline 77 \\ -45 \\ \hline 32 \end{array}$$

So, Q = 21, R = 32

(d) $798 \div 65$

$$\begin{array}{r} 65\overline{)798}\,(12 \\ -65\downarrow \\ \hline 148 \\ -130 \\ \hline 18 \end{array}$$

So, Q = 12, R = 18

(e) $969 \div 88$

$$\begin{array}{r} 88\overline{)969}\,(11 \\ -88\downarrow \\ \hline 89 \\ -88 \\ \hline 1 \end{array}$$

So, Q = 11, R = 1

(f) $899 \div 89$

$$\begin{array}{r} 99\overline{)899}\,(9 \\ -891 \\ \hline 8 \end{array}$$

So, Q = 10, R = 9

5. Divide the following :

Ans. (a) $8638 \div 17$

$$\begin{array}{r} 17\overline{)8638}\,(508 \\ -85\downarrow\downarrow \\ \hline 138 \\ -136 \\ \hline 2 \end{array}$$

So, Q = 508, R = 2

(b) $3333 \div 77$

$$\begin{array}{r} 77\overline{)3333}\,(43 \\ -308\downarrow \\ \hline 253 \\ -231 \\ \hline 22 \end{array}$$

So, Q = 43, R = 22

(c) $2900 \div 25$

$$\begin{array}{r} 25\overline{)2900}\,(116 \\ -25 \\ \hline 40 \\ -25 \\ \hline 150 \\ -150 \\ \hline \times \end{array}$$

So, Q = 116 R = 0

(d) $3475 \div 34$

$$\begin{array}{r} 34\overline{)3475}\,(102 \\ -34 \\ \hline 75 \\ -68 \\ \hline 7 \end{array}$$

So, Q = 102 R = 7

(e) $4670 \div 45$

$$\begin{array}{r} 45\overline{)4670}\,(103 \\ -45\downarrow\downarrow \\ \hline 170 \\ -135 \\ \hline 35 \end{array}$$

So, Q = 103, R = 35

(f) $5464 \div 54$

$$\begin{array}{r} 54\overline{)5464}\,(101 \\ -54\downarrow\downarrow \\ \hline 64 \\ -54 \\ \hline 10 \end{array}$$

So, Q = 101, R = 10

(g) $3575 \div 64$

$$\begin{array}{r} 64\overline{)3575}\,(55 \\ -320\downarrow \\ \hline 375 \\ -375 \\ \hline 55 \end{array}$$

So, Q = 55, R = 55

(h) $82063 \div 14$

$$\begin{array}{r} 14\overline{)82063}\,(5861 \\ -70\downarrow\,| \\ \hline 120\,| \\ -112\downarrow\,| \\ \hline 86\,| \\ -84\downarrow\,| \\ \hline 23 \\ 14 \\ \hline 9 \end{array}$$

So, Q = 5861, R = 9

(i) $4670 \div 79$

$$\begin{array}{r} 79\overline{)4670}\,(59 \\ -395\downarrow \\ \hline 720 \\ -711 \\ \hline 9 \end{array}$$

So, Q = 59, R = 9

(j) $26785 \div 23$

$$\begin{array}{r} 23\overline{)26785}\,(1164 \\ -23\downarrow\,| \\ \hline 37\,| \\ -23\downarrow\,| \\ \hline 148\,| \\ -138\downarrow\,| \\ \hline 105 \\ -92 \\ \hline 13 \end{array}$$

So, Q = 1164, R = 13

(k) $9358 \div 99$

$$\begin{array}{r} 99\overline{)9358}\,(94 \\ -891\downarrow \\ \hline 448 \\ -396 \\ \hline 52 \end{array}$$

So, Q = 94, R = 52

(l) $62535 \div 60$

$$\begin{array}{r} 60\overline{)62535}\,(1042 \\ -60\downarrow\downarrow\,| \\ \hline 253\,| \\ -240\downarrow\,| \\ \hline 135 \\ -120 \\ \hline 15 \end{array}$$

So, Q = 1042, R = 15

Exercise-17

1. Divide and write quotient and remainder :

Ans. (a) $653 \div 100$

$$\begin{array}{r} 100\overline{)653}\,(6 \\ -600 \\ \hline 53 \end{array}$$

Q = **6,** R = **53**

(b) $4325 \div 10$

$$\begin{array}{r} 10\overline{)4325}\,(432 \\ -40 \\ \hline 32 \\ -30 \\ \hline 25 \\ -20 \\ \hline 5 \end{array}$$

Q = **432,** R = **5**

(c) $755 \div 100$

$100\overline{)755}(7$
-700
55

$Q = 7, R = 55$

(d) $5635 \div 100$

$100\overline{)5635}(56$
-500
635
-600
35

$Q = 56, R = 35$

(e) $85864 \div 100$

$100\overline{)85864}(858$
-800
586
-500
864
-800
64

$Q = 858, R = 64$

(f) $4356 \div 1000$

$1000\overline{)4356}(4$
-4000
356

$Q = 4, R = 356$

(g) $32532 \div 1000$

$1000\overline{)32532}(32$
-3000
2532
-2000
532

$Q = 32, R = 532$

(h) $123565 \div 1000$

$1000\overline{)123565}(123$
-1000
23560
-2000
3560
-3000
560

$Q = 123, R = 565$

2. Find the value of :

Ans. (a) $150 \div 30 = 5$

$30\overline{)150}(5$
-150
$\times$

(b) $250 \div 50 = 5$

$50\overline{)250}(5$
-250
$\times$

(c) $420 \div 60 = 7$

$60\overline{)420}(7$
-420
$\times$

(d) $200 \div 40 = 5$

$40\overline{)200}(5$
-200
$\times$

(e) $560 \div 80 = 7$

$80\overline{)560}(7$
-560
$\times$

(f) $3700 \div 50 = 74$

$50\overline{)3700}(74$
-350
200
-200
$\times$

(g) $1540 \div 70 = 22$

$70\overline{)1540}(22$
-140
140
-140
$\times$

(h) $9630 \div 90 = 107$

$90\overline{)9630}(107$
-90
630
-630
$\times$

(i) $3580 \div 20 = 179$

$20\overline{)3580}(179$
-20
158
-140
180
-180
$\times$

(j) $7850 \div 30 = 261, R = 20$

$30\overline{)7850}(261$
-60
185
-180
50
-30
20

3. Write the quotient and the remainder for each of the following division :

Ans. (a) $190 \div 20$

$20\overline{)190}(9$
-180
10

$Q = 9, R = 10$

(b) $290 \div 30$

$30\overline{)290}(9$
-270
20

$Q = 9, R = 20$

(c) $330 \div 40$

$40\overline{)330}(8$
-320
10

$Q = 8, R = 10$

(d) $460 \div 50$

$50\overline{)460}(9$
-450
10

$Q = 9, R = 10$

(e) $440 \div 60$

$60\overline{)440}(7$
-420
20

$Q = 7, R = 20$

(f) $640 \div 70$

$70\overline{)640}(9$
-630
10

$Q = 9, R = 10$

(g) $660 \div 80$

$80\overline{)660}(8$
-640
20

$Q = 8, R = 20$

(h) $1840 \div 90$

$90\overline{)1840}(20$
-1800
40

$Q = 20, R = 40$

(i) $340 \div 40$

$40\overline{)340}(8$
-320
20

$Q = 8, R = 20$

Exercise 18

1. Find the value of :

Ans. (a) $861 \div 123$

$123\overline{)861}(7$
-861
$\times$

$Q = 7, R = 0$

(b) $696 \div 232$

$232\overline{)696}(3$
-696
$\times$

$Q = 3, R = 0$

(c) $966 \div 322$

$322\overline{)966}(3$
-966
$\times$

$Q = 3, R = 0$

(d) $710 \div 355$

$355\overline{)710}(2$
-710
$\times$

$Q = 2, R = 0$

(e) $824 \div 412$

$412\overline{)824}(2$
-824
$\times$

$Q = 2, R = 0$

(f) $864 \div 432$

$432\overline{)864}(2$
-864
$\times$

$Q = 2, R = 0$

(g) $1620 \div 135$

$135\overline{)1620}(12$
-135
270
-270
$\times$

$Q = 12, R = 0$

(h) $5694 \div 438$

$438\overline{)5694}(13$
-438
1314
-1314
$\times$

$Q = 13, R = 0$

(i) $9999 \div 909$

$909\overline{)9999}(11$
-909
909
-909
$\times$

$Q = 11, R = 0$

(j) $8866 \div 806$

$806\overline{)8866}(11$
-806
806
-806
$\times$

$Q = 11, R = 0$

(k) $6060 \div 505$

$505\overline{)6060}(12$
-505
1010
-1010
$\times$

$Q = 12, R = 1$

(l) $3900 \div 325$

$325\overline{)3900}(12$
-325
650
-650
$\times$

$Q = 12, R = 0$

2. Solve the following :

Ans. (a) $18414 \div 186$

$186\overline{)18414}(99$
-1674
1674
-1674
$\times$

$Q = 99, R = 1$

(b) $27196 \div 523$

$523\overline{)27196}(52$
-2615
1046
-1046
$\times$

$Q = 52, R = 0$

(c) $22644 \div 666$

$666\overline{)22644}(33$
-1998
2664
-2664
$\times$

$Q = 33, R = 0$

(d) $15840 \div 198$

$198\overline{)15840}(80$
-15840
0

$Q = 80, R = 0$

(e) $264240 \div 367$

$367\overline{)264240}(720$
-2569
734
-734
0

$Q = 720, R = 0$

(f) $22419 \div 423$

$423\overline{)22419}(53$
-2115
1269
-1269
$\times$

$Q = 53, R = 0$

3. Divide :

Ans. (a) $627 \div 157$

$157\overline{)627}(3$
-471
$\times$

$Q = 3, R = 156$

(b) $789 \div 262$

$262\overline{)789}(3$
-786
$\times 3$

$Q = 3, R = 3$

(c) $928 \div 432$

$432\overline{)928}(2$
-864
64

$Q = 2, R = 64$

(d) $8569 \div 714$

$714\overline{)8569}(12$
-714
1429
-1428
1

$Q = 12, R = 1$

(e) $6192 \div 516$

$516\overline{)6192}(12$
-516
1032
-1032
$\times$

$Q = 12, R = 0$

(f) $9968 \div 906$

$906\overline{)9968}(11$
-906
908
-906
2

$Q = 11, R = 2$

(g) $64378 \div 125$

$125\overline{)64378}(515$
-625
187
-125
628
-625
3

$Q = 515, R = 3$

(h) $72558 \div 678$

$678\overline{)72558}(107$
-678
4758
-4746
12

$Q = 107, R = 12$

(i) $65957 \div 324$

$324\overline{)65957}(203$
-648
1157
-972
185

$Q = 203, R = 185$

Exercise 19

Simplify :

Sol. **1.** $8 + 18 \div 2 \text{ of } 3$
$= 8 + 18 \div 6$
$= 8 + 3 = 11$ **Ans**

2. $15 \div 3 \times 5 - 5$
$= 5 \times 5 - 5$
$= 25 - 5 = 20$ **Ans**

3. $6 + 15 \text{ of } 3 \div 5$
$= 6 + 15 \text{ of } 3 \div 5$
$= 6 + 45 \div 5$
$= 6 + 9 = 11$ **Ans**

4. $15 \times 9 \div 3$
$= 15 \times 3$
$= 45$ **Ans**

5. $30 + 5 \text{ of } 3 \div 5 - 10 \times 2 + 30 \div 5$
$= 30 + 15 \div 5 - 10 \times 2 + 30 \div 5$
$= 30 + 3 - 20 + 6$
$= 30 + 3 + 6 - 20$
$= 39 - 20 = 19$ **Ans.**

6. $24 \div 6 \text{ of } 4 \times 4 \text{ of } 3 - 8 + 12$
$= 24 \div 24 \times 12 - 8 + 12$
$= 12 + 12 - 8$
$= 24 - 8 = 16$ **Ans.**

7. $120 \text{ of } 5 \div 12 \text{ of } 5 + 125 \div 5 - 5 \times 7$
$= 600 \div 60 + 125 \div 5 - 5 \times 7$
$= 10 + 25 - 5 \times 7$
$= 10 + 25 - 35$
$= 35 - 35 = 0$ **Ans.**

8. $320 + 24 \times 30 - 1020 \div 15$
$= 320 + 24 \times 30 - 68$
$= 320 + 720 - 68$
$= 1040 - 68 = 972$ **Ans.**

Exercise-20

Solve the following word problems :

1. There were 8 packets of pen. Each packet had 80 pens. These pens were distributed among 80 students. How many pens did each get?

Sol. Total number of pens = 8× 80
Pens each students go = 8 × 80 ÷ 80

$$\begin{array}{r} 80 \\ \times\ 8 \\ \hline 640 \end{array} \qquad 60\overline{)420}\,(7 \quad -420 \quad \times$$

∴ Each student will get 8 pens.

2. On the occasion of a party, Seema distributed 520 toffees equally among 130 girls. Rashi distributed 390 toffees equally among all those girls. How many toffees did each girl get altogether?

Sol. Total toffees distributed = 520 + 390
Total girls = 130
Toffee each girl get = 520 + 390 ÷ 130

$$\begin{array}{r} 520 \\ +\ 390 \\ \hline 910 \end{array} \qquad 130\overline{)910}\,(7 \quad -910 \quad \times$$

∴ Each girl will get 7 toffees.

3. 11050 people live in a small town. There are 130 buildings in that town. Each building has 17 flats. Equal numbers of people live in each flat. Find the total number of people living in each building and also find the number of people living in each flat.

Sol. Total flats = 130 × 17
Total number of people living in each building = 11050 ÷ 130
Total number of people living in each flat = 11050 ÷ 130 × 17

$$\begin{array}{r} 130 \\ \times\ 17 \\ \hline 910 \\ 1300 \\ \hline 2210 \end{array} \qquad 130\overline{)11050}\,(85 \quad -1040 \quad 650 \quad -650 \quad \times$$

$$2210\overline{)11050}\,(5 \quad -11050 \quad \times$$

∴ The total number of people living in each building = 85 and the number of people living in each flat = 5.

4. What least number should be added to 15100, so that the sum is exactly divisible by 65?

Sol. Here the remainder is 20, so to make the entire number exactly devisible by 65 we should add 65 – 20 = 45 to 15100

$$65\overline{)15100}\,(232 \quad -130 \quad 210 \quad -195 \quad 150 \quad -130 \quad \times 20$$

5. A fruit-seller bought 85329 mangoes. 67 mangoes were found rotten. Remaining mangoes were packed in 89 baskets. Find the number of mangoes in each basket.

Sol. Number of mangoes in each basket = 85329 – 67 ÷ 89

$$\begin{array}{r} 85329 \\ -\ 67 \\ \hline 85262 \end{array} \qquad 89\overline{)85262}\,(958 \quad -801 \quad 516 \quad -445 \quad 712 \quad -712 \quad \times$$

∴ The number of mangoes in each basket = 958.

6. A school library had ₹ 64595 for buying books for school. If each book costs ₹ 115, how many books were purchased?

Sol. Total number of books purchased
= ₹ 64595 ÷ ₹ 115

$$115\overline{)64595}\,(561 \quad -575 \quad 709 \quad -690 \quad 195 \quad -115 \quad 80$$

∴ Total number of books purchased = 561 and amount left = ₹ 80

7. A factory produced 25770 metres of wire in the month of June. If the factory produced the same length of wire everyday, find the daily production of the factory.

Sol. Daily production of the factory
$= 25770 \div 30$

$\therefore$ The daily production $= 859$ metres

$$\begin{array}{r|l} 30 & 25770 \\ -240\downarrow & 859 \\ \hline 177 & \\ -150\downarrow & \\ \hline 270 & \\ -270 & \\ \hline \times & \end{array}$$

8. 15920 students are standing in 199 rows. Each row has equal number of students. How many students are standing in each row?

Sol. Number of students standing in each row
$= 15920 \div 199$

$$\begin{array}{r|l} 199 & 15920 \\ -1592\downarrow & 80 \\ \hline 0 & \end{array}$$

$\therefore$ The number of students in each row $= 80$

9. 45 crates can be loaded in a cart. How many carts will be needed for 4590 crates?

Sol. Carts needed for crates $= 4590 \div 45$

$\therefore$ Total number of carts needed $= 102$

$$\begin{array}{r|l} 45 & 4590 \\ -45\downarrow\downarrow & 102 \\ \hline 90 & \\ -90 & \\ \hline \times & \end{array}$$

10. 4809 oranges were divided equally among 75 boys. How many maximum number of oranges did each one get and how many remained undivided?

Sol. Maximum number of oranges get by each one $= 4809 \div 75$

$\therefore$ The maximum number of oranges get by each student $= 64$

Oranges remained undivided $= 9$

$$\begin{array}{r|l} 75 & 4809 \\ -450\downarrow & 64 \\ \hline 309 & \\ -300 & \\ \hline \times 9 & \end{array}$$

11. A certain number on being divided by 23, gives 121 as quotient and 18 as remainder. Find the number.

Sol. Required number $= 23 \times 121 + 18$

$$\begin{array}{r} 23 \\ \times\ 121 \\ \hline 23 \\ 460 \\ 2300 \\ \hline 2783 \end{array} \qquad \begin{array}{r} 2783 \\ +\ 18 \\ \hline 2801 \end{array}$$

$\therefore$ The required number $= 2801$

12. In an army camp, there were provisions for 425 men for 30 days. However, 375 men attendend the camp. How long did the provisions last?

Sol. The provisions would last for
$= 452 \times 30 \div 375$ days

$$\begin{array}{r} 425 \\ \times\ 30 \\ \hline 000 \\ 12750 \\ \hline 12750 \end{array} \qquad \begin{array}{r|l} 375 & 12750 \\ -1125\downarrow & 34 \\ \hline 1500 & \\ -1500 & \\ \hline \times & \end{array}$$

$\therefore$ The provision would now last for 34 days

13. A shopkeeper sold 36 almirahs for ₹ 3784 each. From the money so received he bought 32 refrigerators. What is the cost of each refrigerator?

Sol. Amount received after selling the almirahs $= ₹\ 3784 \times 36$

Cost of each refrigerator
$= 3784 \times 36 \div 32$

$$\begin{array}{r} 3784 \\ \times\ 36 \\ \hline 22704 \\ 113520 \\ \hline 136224 \end{array} \qquad \begin{array}{r|l} 32 & 136224 \\ -128\downarrow & 4257 \\ \hline 82 & \\ -64\downarrow & \\ \hline 182 & \\ -160\downarrow & \\ \hline 224 & \\ -224 & \\ \hline \times & \end{array}$$

$\therefore$ The cost of each refrigeration ₹ 4257

14. ₹ 9900 are divided among 96 persons. How much money does each person get? How much money is left behind?

Sol. Money received by each person $= ₹\ 9900 \div 96$

$\therefore$ Money received by each person $= ₹103$

Money left behind $= ₹12$

$$\begin{array}{r|l} 96 & 9900 \\ -96\downarrow\downarrow & 103 \\ \hline 300 & \\ -288 & \\ \hline 12 & \end{array}$$

15. What least number should be subtracted from 5437 so that the result is exactly divisible by 16?

Sol. Here the remainder is 13. so to have the number exactly divisible we should subtract 13 from the number.

$$\begin{array}{r|l} 16 & 5437 \\ -48\downarrow & 339 \\ \hline 63 & \\ -48\downarrow & \\ \hline 157 & \\ -144 & \\ \hline 13 & \end{array}$$

16. 94 boxes of apples can be loaded in a truck. How many trucks will be required to load 36272 boxes. How many boxes will be left over?

Sol. Trucks needed to load the boxes
$= 36272 \div 94$

$\therefore$ The number of trucks will be required = 385
The number of boxes left over = 82

```
94)36272(385
 -282
  807
 -752
   552
  -470
    82
```

17. A car travelled 1152 km in 16 hours. What average distance did it travel per hour?

Sol. Average distance travelled by the car per hour = $1152 \div 16$

$\therefore$ The car per hour travel the average distance of 72 km

```
16)1152(72
 -112
   32
  -32
    ×
```

18. How many 5-rupee notes one can have from ₹ 57525?

Sol. Number of 5- rupee notes one can have from ₹ 57525
$= ₹\ 57525 \div ₹\ 5$

$\therefore$ One can have 11505 notes of ₹ 5 from ₹ 57525.

```
5)57525(11505
 -5
  7
 -5
  25
 -25
   25
  -25
    ×
```

19. The cost of 5 TV sets is ₹ 64680. What is the cost of 1 TV set?

Sol. The cost of 1 TV set = $64680 \div 5$

```
5)64680(12936
 -5
  14
 -10
   46
  -45
    18
   -15
     30
    -30
      ×
```

$\therefore$ The cost of 1 TV set = ₹ 12936

20. Distribute ₹ 28576 equally among 16 friends.

Sol. $\because$ ₹ $28576 \div 16$

$\therefore$ Each friend will get ₹ 1786

```
16)28576(1786
 -16
  125
 -112
   137
  -128
    96
   -96
    ×
```

21. A number is multiplied by 26. The product is 13312. Find the number.

Sol. The required number
$= 13312 \div 26$

$\therefore$ The required number is 512

```
26)13312(512
 -130
   31
  -26
   52
  -52
    ×
```

22. There are 5120 trees in an orchard. Trees are in different rows having equal number of trees in each row. If each has 16 trees, find the number of rows.

Sol. The number of rows
$= 5120 \div 16$

$\therefore$ The number of rows
$= 320$

```
16)5120(320
 -48
  32
 -32
   0
   0
   ×
```

Worksheet

Divisibility Tests

Put a tick (✓) against the numbers which can divide by the given numbers completely :

Ans.

(a)	77	(b)	66
	By 7		By 3, 6
(c)	11	(d)	98
	—		By 3, 7
(e)	79	(f)	14
	—		By 7
(g)	48	(h)	55
	By 3, 4, 6		By 5
(i)	68	(j)	82
	By 4		—
(k)	92	(l)	81
	By 4		By 3
(m)	34	(n)	79
	—		—
(o)	87	(p)	50
	By 3		By 5

Exercise-21

Do it yourself.

Exercise-22

1. (a) The smallest multiple of 2 is :
⇒ $2 \times 1 = 2$
(b) The second multiple of 9 is :
⇒ $9 \times 2 = 18$
(c) The first four multiple of 8 are :
⇒ $8 \times 1 = 8$; $8 \times 2 = 16$;
$8 \times 3 = 24$; $8 \times 4 = 32$
(d) The first six multiple of 6 are :
⇒ $6 \times 1 = 6$; $6 \times 2 = 12$; $6 \times 3 = 18$;
$6 \times 4 = 24$; $6 \times 5 = 30$; $6 \times 6 = 36$
(e) The first six multiple of 11 is :
⇒ $11 \times 6 = 66$
(f) The fifth multiple of 12 is :
⇒ $12 \times 5 = 60$

2. (a) The multiples of 4 greater than 20 but less than 32 are 24, 28
(b) The smallest multiple of a number is 0.
(c) The multiples of 8 less than 38 are 8, 16, 24, 32
(d) The first two common multiple of 6 and 9 are: 6, 12, 18, 24, 30, 36, 18 and 36.
(e) The first three common multiples of 3, 4, and 6 are as follows:
Multiples of 3 : 3, 6, 9, **12**, 18, 21, **24**, 27, 30, 33, **36**
Multiples of 4 : 4, 8, **12**, 16, 20, **24**, 28, 32, **36**
Multiples of 6 : 6, **12**, 18, **24**, 30, **36**
∴ 12, 24, 36

3. (a) The number that is a multiple of both 8 and $9 = 8 \times 9 = 72$
(b) The number that is a multiple of 3, 2, and $8 = 24$
(c) $8 \times 2 = 16$; so 16 is a multiple of **8** and **2**.
(d) $6 \times 7 = 42$; so 42 is a multiple of **6** and **7**.
(e) $3 \times 2 \times 8 = 48$, so 48 is a multiple of **3, 2** and **8**.
(f) The multiples of 7 between 21 and 56 are **28, 35, 42, 49**.
(g) The multiples of 10 between 30 and 90 are **40, 50, 60, 70, 80**.
(h) The product of 3, 7 and 6 **126**.

4. **Write 'True' of 'False':**

Ans. (a) Every number is a multiple to itself. **True**
(b) A multiple of a number cannot be equal to the number itself. **False**
(c) 30 is a multiple of 1. **True**
(d) 91 is a multiple of 7. **True**
(e) 4 is a multiple of 39. **False**
(f) 19 is not a multiple of 19. **False**

5. **Write all the even and odd numbers from the following numbers :**
3, 5, 7, 6, 8, 11, 17, 16, 1, 10, 4, 2

Ans. Even numbers are : **2, 4, 6, 8, 10, 16**
Odd numbers are : **1, 3, 5, 7, 11, 17**

6. **What is the next odd numbers?**

Ans. (a) $21 + 2 = \mathbf{23}$ (b) $53 + 2 = \mathbf{28}$
(c) $13 + 2 = \mathbf{15}$ (d) $79 + 2 = \mathbf{81}$
(e) $43 + 2 = \mathbf{45}$ (f) $81 + 2 = \mathbf{83}$

7. **What is the next even numbers?**

Ans. (a) $10 + 2 = \mathbf{45}$ (b) $26 + 2 = \mathbf{12}$
(c) $44 + 2 = \mathbf{46}$ (d) $58 + 2 = \mathbf{60}$
(e) $74 + 2 = \mathbf{76}$ (f) $94 + 2 = \mathbf{96}$

8. (a) 1
(b) 2
(c) 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
(d) 29, 31, 33, 35, 37, 39, 41, 43, 45, 47
(e) 70, 72

9. **What is the smallest number which when subtracted from an even number, makes the difference an odd number?**

Ans. ∵ Even number – odd number
= odd number
Here we have to subtract smallest the smallest odd number from the smallest even number to make the difference and add number.
∴ Smallest even number = 2 and smallest odd number = 1
∴ Difference = 2 – 1 = 1 which is an odd number.

10. (a) **Write the greatest even number of two digits.**

Ans. The greatest number of two digits is 99 (an odd number)
The greatest even number of two digits = 99 – 1 = 98

(b) Write the smallest odd number of four digits.

Ans. Smallest number of four digits is 1000 (an even number)

The smallest odd number of four digits $= 1000 + 1 = 1001$

(c) Write the odd numbers between 100 and 112.

Ans. 101, 103, 105, 107, 109, 111

11. Write whether the numbers are even or odd :

Ans. (a) $2\overline{)440}\,(220$, -440, $\times$

$\therefore$ Even

(b) $2\overline{)2556}\,(1278$, -2, 5, -4, 15, -14, 16, -16, $\times$

$\therefore$ Even

(c) $2\overline{)3258}\,(1629$, -2, 12, -12, 5, -4, 18, -18, $\times$

$\therefore$ Even

(d) $2\overline{)8707}\,(4353$, -8, 7, -6, 10, -10, 7, -6, 1

$\therefore$ Odd

(e) $2\overline{)5320}\,(2660$, -4, 13, -12, 12, -12, 0

$\therefore$ Even

(f) $2\overline{)4321}\,(2160$, -4, 3, -2, 12, -12, 1

$\therefore$ Odd

Exercise-23

1. What is the smallest factor of 95?

Ans. As the smallest number that divides 95 exactly is 5

$\therefore$ The smallest factor of 95 is 5.

2. Write two factors of the following numbers other than 1 and the number :

Ans. (a) 48

$\because$ $2 \times 24 = 48$ $\therefore$ 2 and 24

(b) 32

$\because$ $4 \times 8 = 32$ $\therefore$ 4 and 8

(c) 21

$\because$ $3 \times 7 = 21$ $\therefore$ 3 and 7

(d) 120

$\because$ $12 \times 10 = 120$ $\therefore$ 12 and 10

(e) 64

$\because$ $16 \times 4 = 64$ $\therefore$ 16 and 4

(f) 35

$\because$ $5 \times 7 = 35$ $\therefore$ 5 and 7

3. What is the greatest factor of 39?

Ans. Factors of 39

$\Rightarrow$ $39 = 1 \times 39, 39 = 3 \times 13$

$= 1, 3, 13, 39$

$\therefore$ Greatest factor $= 13$

4. Write four factors of the following numbers :

Ans. (a) $27 \Rightarrow 27 = 1 \times 27, 27 = 3 \times 9$

$\therefore$ Factors $= 1, 3, 9, 27$

(b) 16

$\Rightarrow 16 = 1 \times 16; 16 = 2 \times 8, 16 = 4 \times 4$

$\therefore$ Factors $= 1, 2, 8, 16$

(c) $51 \Rightarrow 51 = 1 \times 51, 51 = 3 \times 17$

$\therefore$ Factors $= 1, 3, 17, 51$

(d) $90 \Rightarrow 90 = 1 \times 90, 90 = 9 \times 10$

$\therefore$ Factors $= 1, 9, 10, 90$

(e) $112 \Rightarrow 1 \times 112, 112 = 7 \times 16$

$\therefore$ Factors $= 1, 7, 16, 112$

5. Is 7 a factor of 203?

Ans. $7\overline{)203}\,(29$, -14, 63, -63, $\times$

$\because$ $203 = 7 \times 29$ $\therefore$ Yes

6. Is 9 a factor of 432?

Ans. $9\overline{)432}\,(48$, -36, 72, -72, $\times$

$\because$ $423 = 9 \times 48$ $\therefore$ Yes

7. Is 5 a factor of 83?

Ans. $5\overline{)83}\,(16$, -5, 33, -30, 3

$\because$ $83 = 5 \times 16 + 3$ $\therefore$ No

8. Is 8 a factor of 1026?

Ans. $8\overline{)1026}\,(128$

$-\,8$

22

-16

66

-64

$\times 2$

$\because\ 1026 = 8 \times 128 + 2$

$\therefore$ No

9. Pick the factors of 42 from the following numbers :
1, 2, 3, 5, 6, 8, 7, 15, 14, 22, 21

Ans. All factors of $42 = 42 \times 1, 42 = 2 \times 21,$
$42 = 3 \times 14, 42 = 6 \times 7$
$= 1, 2, 3, 6, 7, 14, 21, 42$
From the above = **1**, **2**, **3**, 5, **6**, 8, **7**, 15, **14**, 27, **21**

10. Find all factors of these numbers :

(a) $15 \Rightarrow 15 = 1 \times 15, 15 = 3 \times 5$
$\therefore$ all factors $= 1, 3, 5, 15$

(b) $50 \Rightarrow 50 = 1 \times 50, 50 = 2 \times 25,$
$50 = 5 \times 10$
$\therefore$ all factors $= 1, 2, 5, 10, 25, 50$

(c) $75 \Rightarrow 75 = 1 \times 75, 3 \times 25,$
$75 = 5 \times 15$
$\therefore$ all factors $1, 3, 5, 15, 25, 75$

(d) $21 \Rightarrow 21 = 1 \times 21, 21 = 3 \times 7$
$\therefore$ all factors $1, 3, 7, 21$

(e) $60 \Rightarrow 60 = 1 \times 60, 60 = 2 \times 30,$
$60 = 3 \times 20, 60 = 4 \times 15, 60 = 6 \times 10$
$\therefore$ all factors $= 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60$

Exercise-24

1. Write down all the prime numbers less than 20.

Ans. 2, 3, 5, 7, 11, 13, 17, 19

2. Write down all the prime numbers between 30 and 40.

Ans. 31, 37

3. Write down all the prime numbers between 70 and 100.

Ans. 71, 73, 79, 83, 89, 91, 97

4. Write all composite numbers among the first 30 numbers.

Ans. 4, 6, 8, 10 ,12 ,14, 15, 16, 18, 20, 21, 22, 24, 25, 26, 27, 28, 30

5. Write all composite numbers between 50 to 60.

Ans. 51, 52, 54, 55, 56, 57, 58

6. Which of the following numbers are primes?
7, 8, 13, 19, 23, 22, 2, 25, 21, 32, 17, 31

Ans. 7, 13, 19, 23, 2, 17

7. Which of the following numbers are composite?
10, 41, 26, 14, 52, 47, 29, 50, 39, 77, 85, 71.

Ans. 10, 26, 14, 52, 50, 39, 77, 85

8. Write the prime number which is even. **Ans.** 2

9. Write the smallest composite number. **Ans.** 4

10. (a) Write two pairs of prime numbers which differ by 2. **Ans.** 5, 3

(b) Write two composite numbers whose difference is 4. **Ans.** 8, 4

(c) Write a pair of prime numbers whose difference is 1. **Ans.** 2, 3

11. Find the prime factors of the following numbers :

Ans. (a) $36 = 2 \times 18 = 2 \times 2 \times 9$
$= 2 \times 2 \times 3 \times 3$
$\therefore$ 2,2,3,3

(b) $60 = 2 \times 30 = 2 \times 2 \times 15$
$= 2 \times 2 \times 3 \times 5$
$\therefore$ 2, 2, 3, 5

(c) $72 = 2 \times 36 = 2 \times 2 \times 18 = 2 \times 2 \times 2 \times 9 = 2 \times 2 \times 2 \times 3 \times 3$
$\therefore$ 2, 2, 2, 3, 3

(d) $45 = 3 \times 15 = 3 \times 3 \times 5$
$\therefore$ 3,3,5

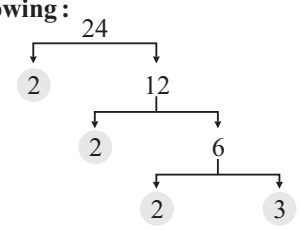
(e) $230 = 2 \times 115 = 2 \times 5 \times 23$
$\therefore$ 2, 5, 23

12. Write the greatest prime number less than each of the following numbers :

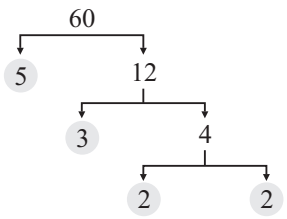
Ans. (a) 2 (b) 7 (c) 23 (d) 29
(e) 53 (f) 71 (g) 83

13. Draw factor trees for each of the following :

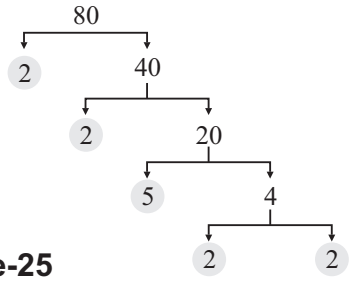
Ans. (a)



(b)



(c)



Exercise-25

1. Which of the following numbers are divisible by 2?

Ans. (a) Numbers having even digit at ones place – 24, 8, 6, 36, 84
Number having odd digit at ones place – 29, 25, 95
∴ Number divisible by 2 = 24, 8, 6, 36, 84.

(b) Number ending in even digits = 200, 852, 526, 924
Number ending in odd digits = 109,425,775
∴ Number divisible by 2 = 200, 852, 526, 924

(c) Number ending in even digits = 1426, 6004, 20, 200
Number ending in odd digits = 2435, 4579, 23807
∴ Number divisible by 2 = 1426, 6004, 20, 200.

2. Are the numbers 306 and 514 divisible by 2 ? Is their sum also divisible by 2?

Ans. Digit at ones place in 306 and 514 = 6 and 4 respectively
∴ They are divisible by 2
Sum of 306 and 514 = 306 + 514 = 820
Digit at ones place in 820 = 0
∴ It is also divisible by 2.

3. Are the numbers 1450 and 3266 divisible by 2? Is their difference also divisible by 2.

Ans. Digit at ones place in 1450 and 3266 = 0 and 6 respectively
∴ They are divisible by 2
Difference of 3266 and 1450 = 3266 – 1450 = 1816
Digit at ones place in 1816 = 6
∴ It is also divisible by 2

4. Which of the following numbers are divisible by 5?

(a) 5, 11, 9, 7, 10, 55, 60, 22, 95, 75, 87.

(b) 315, 354, 800, 204, 6003, 7015, 709, 555.

Ans. (a) Numbers having 0 or 5 at their units place = 5, 10, 55, 60, 95, 75
∴ These are divisible by 5; Rest are not

(b) Numbers having 0 or 5 at their ones place = 315, 800, 7015, 555
∴ These are divisible by 5; Rest are not

5. (a) Is there any number which is divisible by 5 but not by 10 ?

(b) Is there any number which is divisible by 10 but not by 5 ?

Ans. (a) All the numbers having 5 at their ones place are divisible by 5 but not by 10. So **Yes**

(b) There is no number which is divisible by 10 but not by 5. So **No**

6. Which of the following numbers are divisible by 3?

Ans. ∵ A number is divisible by 3 if the sum of the digits is a multiple of 3. ∴ We will find out the sum of the digits to know about their divisibility.

(a)
4 = 4 ∴ not divisible by 3
6 = 6 ∴ not divisible by 6
8 = 8 ∴ not divisible by 8
9 = 9 ∴ not divisible by 9
12 = 1 + 2 = 3 ∴ divisible by 3
17 = 1 + 7 = 8 ∴ not divisible by 3
13 = 1 + 3 = 4 ∴ not divisible by 3
45 = 4 + 5 = 9 ∴ divisible by 3
55 = 5 + 5 = 10 ∴ not divisible by 3
96 = 9 + 6 = 15 ∴ divisible by 3
62 = 6 + 2 = 8 ∴ not divisible by 3
75 = 7 + 5 = 12 ∴ divisible by 3
73 = 7 + 3 = 10 ∴ divisible by 3
93 = 9 + 3 = 12 ∴ divisible by 3

(b) 111 = 1 + 1 + 1 = 3
∴ divisible by 3
220 = 2 + 2 + 0 = 4
∴ not divisible by 3
123 = 1 + 2 + 3 = 6
∴ not divisible by 3
3250 = 3 + 2 + 5 + 0 = 10
∴ not divisible by 3
4593 = 4 + 5 + 9 + 3 = 21
∴ divisible by 3
2466 = 2 + 4 + 6 + 6 = 18
∴ divisible by 3
4022 = 4 + 0 + 2 + 2 = 8
∴ not divisible by 3
12345 = 1 + 2 + 3 + 4 + 5 = 15
∴ divisible by 3
71825 = 7 + 1 + 8 + 2 + 5 = 23
∴ not divisible by 3

7. Find the smallest number in each of the following numbers that should be added to the number to get a number divisible by 5.

Ans. (a) $2456 \rightarrow$ Number at ones place -6

$\because \quad 6+4=10$

$\therefore$ Smallest number to be added $=4$

(b) $43227 \rightarrow$ Number at ones place -7

$\because \quad 7+3=10$

$\therefore$ Smallest number to be added $=3$

8. Find the smallest number that should be subtracted from the number 80005 to get a number divisible by 10.

Ans. $\because$ Only a number having 0 at its ones place is divisible by 10 $\therefore$ Smallest number to be subtracted $=5$

9. Write all the numbers of two digits that are divisible by 3 as well as 10.

Ans. Numbers of two digits divisible by 10 $= 10, 20, 30, 40, 50, 60, 70, 80, 90$

$\therefore$ Number divisible by 3 in the above $= 30, 60, 90$

$\therefore$ All the numbers of two digits divisible by 3 as well $10 = 30, 60, 90$

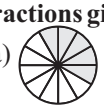
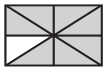
9 Fractions

Exercise-26

1. Write the fraction represented by the shaded parts in each of the following figures :

Ans. (a) $\frac{5}{8}$ (b) $\frac{1}{2}$ (c) $\frac{3}{4}$ (d) $\frac{5}{13}$

2. Colour the figures to match the fractions given below :

Ans. (a)  $\frac{5}{12}$ (b)  $\frac{3}{7}$ (c)  $\frac{7}{8}$

3. Write the numerators and denominators of the following fractional numbers :

Ans. (a) $\frac{5}{8}$ $N=3, D=26$ (b) $\frac{1}{2}$ $N=5, D=17$

(c) $\frac{5}{8}$ $N=8, D=19$ (d) $\frac{1}{2}$ $N=21, D=31$

(e) $\frac{5}{8}$ $N=12, D=13$ (f) $\frac{1}{2}$ $N=20, D=41$

Exercise-27

1. Which of the following fractions are like fractions :

Ans. (a) $\frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{7}{10}, \frac{3}{8}$, Fractions with same denominator $= \frac{1}{5}, \frac{2}{5}, \frac{3}{5}$

$\therefore$ Like fractions $= \frac{1}{5}, \frac{2}{5}, \frac{3}{5}$

(b) $\frac{3}{7}, \frac{2}{5}, \frac{5}{7}, \frac{5}{9}, \frac{4}{7}$, Fractions with same denominator $= \frac{3}{7}, \frac{5}{7}, \frac{4}{7}$

$\therefore$ Like fractions $= \frac{3}{7}, \frac{5}{7}, \frac{4}{7}$

(c) $\frac{1}{9}, \frac{2}{9}, \frac{9}{10}, \frac{7}{8}, \frac{4}{9}$; Fractions with same denominator $= \frac{1}{9}, \frac{2}{9}, \frac{4}{9}$

$\therefore$ Like fractions $= \frac{1}{9}, \frac{2}{9}, \frac{4}{9}$

(d) $\frac{3}{8}, \frac{7}{9}, \frac{5}{8}, \frac{4}{8}, \frac{10}{13}$; Fractions with same denominator $= \frac{3}{8}, \frac{5}{8}, \frac{4}{8}$

$\therefore$ Like fraction $= \frac{3}{8}, \frac{5}{8}, \frac{4}{8}$

2. Ring the proper fractions in each of the following :

Ans. (a) $\frac{2}{5}, \frac{3}{7}, \frac{9}{10}, 8, \frac{8}{5}$; Fractions with denominator more than numerator $= \frac{2}{5}, \frac{3}{7}, \frac{9}{10}$

$\therefore$ Proper fractions $= \frac{2}{5}, \frac{3}{7}$ and $\frac{9}{10}$

(b) $\frac{7}{8}, 1\frac{3}{5}, \frac{19}{5}, \frac{4}{7}$; Fractions with denominator more than numerator $= \frac{7}{8}, \frac{4}{7}$

$\therefore$ Proper fractions $= \frac{7}{8}, \frac{4}{7}$

(c) $\frac{7}{8}, \frac{3}{5}, \frac{19}{5}, \frac{4}{7}$; Fractions with denominator more than numerator $= \frac{29}{35}, \frac{3}{4}, \frac{5}{9}$

$\therefore$ Proper fractions $= \frac{29}{35}, \frac{3}{4}, \frac{5}{9}$

(d) $\frac{30}{17}, \frac{17}{18}, \frac{20}{27}, \frac{36}{27}$; Fractions with denominator more than numerator $= \frac{17}{18}, \frac{20}{27}$

$\therefore$ Proper fractions $= \frac{17}{18}, \frac{20}{27}$

3. Ring the improper fractions in each of the following :

Ans. (a) $\frac{5}{2}, \frac{3}{5}, \frac{8}{8}, \frac{6}{4}$; Fractions with numerator more or equal to denominator $= \frac{5}{2}, \frac{8}{8}, \frac{6}{4}$

$\therefore$ Improper fractions $= \frac{5}{2}, \frac{8}{8}$ and $\frac{6}{4}$

(b) $\frac{6}{13}, \frac{13}{6}, \frac{14}{9}, \frac{2}{7}$; Fractions with numerator more or equal to denominator $= \frac{13}{6}, \frac{14}{9}$

$\therefore$ Improper fractions $= \frac{13}{6}, \frac{14}{9}$

(c) $\frac{17}{9}, \frac{13}{29}, \frac{19}{8}, \frac{2}{4}$; Fractions with numerator more or equal to denominator $= \frac{17}{9}, \frac{19}{8}$

$\therefore$ Improper fractions $= \frac{17}{9}, \frac{19}{8}$

4. Which of the following fractions are mixed :

Ans. (a) $2\frac{3}{4}, \frac{12}{5}, \frac{3}{7}, 7\frac{1}{4}$; Fractions containing whole numbers along with fraction $= 2\frac{3}{4}, 7\frac{1}{4}$

$\therefore$ Mixed fractions $= 2\frac{3}{4}, 7\frac{1}{4}$

(b) $\frac{13}{1}, 8\frac{1}{3}, 5\frac{2}{5}, \frac{2}{3}$; Fractions containing whole numbers along with fraction $= 8\frac{1}{3}, 5\frac{2}{5}$

$\therefore$ Mixed fractions $= 8\frac{1}{3}, 5\frac{2}{5}$

(c) $\frac{12}{17}, \frac{1}{3}, \frac{29}{18}, \frac{5}{7}$; Fractions containing whole numbers along with fraction $= 2\frac{1}{3}, 7\frac{2}{5}$

$\therefore$ Mixed fractions $= 2\frac{1}{3}, 7\frac{2}{5}$

5. Which of the following are unit fractions :

Ans. $\frac{1}{7}, \frac{3}{1}, \frac{4}{7}, \frac{1}{8}, \frac{8}{9}, \frac{8}{1}, \frac{1}{9}$, Fractions having 1 as numerator $= \frac{1}{7}, \frac{1}{8}, \frac{1}{9}$

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

$\therefore$ Unit fraction $= \frac{1}{7}, \frac{1}{8}, \frac{1}{9}$

6. Express the following improper fractions as mixed fraction :

Ans. (a) $\frac{11}{4} = 2\frac{3}{4}$ (b) $\frac{17}{7} = 2\frac{3}{7}$

(c) $\frac{8}{3} = 2\frac{2}{3}$ (d) $\frac{10}{3} = 3\frac{1}{3}$

(e) $\frac{15}{12} = 1\frac{\cancel{3}^{1}}{\cancel{12}_{4}} = 1\frac{1}{4}$ (f) $\frac{27}{4} = 6\frac{3}{4}$

(g) $\frac{18}{5} = 3\frac{3}{5}$ (h) $\frac{23}{7} = 3\frac{2}{7}$

7. Change the following into improper fractions :

Ans. (a) $1\frac{1}{4} = \frac{4 \times 1 + 1}{4} = \frac{4+1}{4} = \frac{5}{4}$

(b) $2\frac{5}{7} = \frac{7 \times 2 + 5}{7} = \frac{14+5}{7} = \frac{19}{7}$

(c) $4\frac{2}{5} = \frac{5 \times 4 + 2}{5} = \frac{20+2}{5} = \frac{22}{5}$

(d) $3\frac{4}{7} = \frac{7 \times 3 + 4}{7} = \frac{21+4}{7} = \frac{25}{7}$

(e) $5\frac{3}{8} = \frac{8 \times 5 + 3}{8} = \frac{40+3}{8} = \frac{43}{8}$

(f) $6\frac{5}{9} = \frac{9 \times 6 + 5}{9} = \frac{54+5}{9} = \frac{59}{9}$

(g) $2\frac{7}{8} = \frac{8 \times 2 + 7}{8} = \frac{16+7}{8} = \frac{23}{8}$

(h) $8\frac{2}{5} = \frac{8 \times 8 + 2}{5} = \frac{40+2}{5} = \frac{42}{5}$

(i) $5\frac{4}{5} = \frac{5 \times 5 + 4}{5} = \frac{25+4}{5} = \frac{29}{5}$

(j) $7\frac{1}{7} = \frac{7 \times 7 + 1}{7} = \frac{49+1}{7} = \frac{50}{7}$

(k) $4\frac{1}{4} = \frac{4 \times 4 + 1}{4} = \frac{16+1}{4} = \frac{17}{4}$

(l) $9\frac{1}{9} = \frac{9 \times 9 + 1}{9} = \frac{81+1}{9} = \frac{82}{9}$

8. Write the whole number and the fraction's part separately of the following mixed fractions :

Ans. (a) $3\frac{2}{3}$
Whole part = 3
Fraction part = $\frac{2}{3}$

(b) $1\frac{1}{4}$
Whole part = 1
Fraction part = $\frac{1}{4}$

(c) $8\frac{1}{5}$
Whole part = 8
Fraction part = $\frac{1}{5}$

(d) $10\frac{5}{8}$
Whole part = 10
Fraction part = $\frac{5}{8}$

(e) $4\frac{4}{9}$ (f) $2\frac{7}{8}$

Whole part = 4 Whole part = 2

Fraction part = $\frac{4}{9}$ Fraction part = $\frac{7}{8}$

(g) $6\frac{7}{9}$

Whole part = 6

Fraction part = $\frac{7}{9}$

9. Write each of the following divisions as fractions :

Ans. (a) $6 \div 1 = \frac{6}{1}$ (b) $15 \div 32 = \frac{15}{32}$

(c) $8 \div 11 = \frac{8}{11}$ (d) $12 \div 15 = \frac{12}{15}$

(e) $17 \div 19 = \frac{17}{19}$ (f) $25 \div 37 = \frac{25}{37}$

(g) $8 \div 8 = \frac{8}{8}$ (h) $9 \div 11 = \frac{9}{11}$

10. Express the following fractions in the form of divisions :

Ans. (a) $\frac{3}{5} = 3 \div 5$ (b) $\frac{7}{9} = 7 \div 9$

(c) $\frac{13}{17} = 13 \div 17$ (d) $\frac{7}{1} = 7 \div 1$

(e) $\frac{23}{9} = 23 \div 9$ (f) $3\frac{1}{3}$

$= \frac{3 \times 3 + 1}{3}$

$= \frac{9 + 1}{3} = \frac{10}{3}$

$= 10 \div 3$

(g) $\frac{25}{15} = 25 \div 17$ (h) $7\frac{1}{9}$

$= \frac{9 \times 7 + 1}{9}$

$= \frac{63 + 1}{9} = \frac{64}{9}$

$= 64 \div 9$

Exercise-28

1. (a) $\frac{2}{3}$

By multiplying both with same number, we get

$\frac{2 \times 2}{3 \times 2} = \frac{4}{6}, \frac{2 \times 4}{3 \times 4} = \frac{8}{12}$

(b) $\frac{2}{5}$

By multiplying both with same number, we get

$\frac{2 \times 2}{5 \times 2} = \frac{4}{10}, \frac{2 \times 3}{5 \times 3} = \frac{6}{15}$

$\frac{2 \times 4}{5 \times 4} = \frac{8}{20}, \frac{2 \times 5}{5 \times 5} = \frac{10}{25}$

(c) $\frac{1}{5}$

By multiplying both with same number, we get

$\frac{1 \times 5}{5 \times 5} = \frac{5}{25}, \frac{1 \times 6}{5 \times 6} = \frac{6}{30}$,

$\frac{1 \times 7}{5 \times 7} = \frac{7}{35}$

(d) $\frac{5}{6}$

By multiplying both with same number, we get

$\frac{5 \times 2}{6 \times 2} = \frac{10}{12}, \frac{5 \times 3}{6 \times 3} = \frac{15}{18}$

$\frac{5 \times 4}{6 \times 4} = \frac{20}{24}, \frac{5 \times 5}{6 \times 5} = \frac{25}{30}$

$\frac{5 \times 6}{6 \times 6} = \frac{30}{36}, \frac{5 \times 7}{6 \times 7} = \frac{35}{42}$

2. Fill in the boxes :

Ans. (a) $\frac{2}{5} = \frac{\mathbf{10}}{25}$ (b) $\frac{3}{4} = \frac{9}{\mathbf{12}}$

$\frac{2 \times 25}{5}$ $\frac{4 \times 9}{3}$

$\frac{50}{5} = 10$ $\frac{36}{3} = 12$

(c) $\frac{4}{7} = \frac{16}{\mathbf{26}}$ (d) $\frac{15}{13} = \frac{45}{\mathbf{39}}$

$\frac{7 \times 16}{4}$ $\frac{13 \times 45}{15}$

$\frac{112}{4} = 28$ $\frac{585}{15} = 39$

(e) $\frac{9}{11} = \frac{\mathbf{27}}{33}$ (f) $\frac{8}{\mathbf{13}} = \frac{24}{39}$

$\frac{9 \times 33}{11}$ $\frac{8 \times 39}{24}$

$\frac{297}{11} = 10$ $\frac{312}{24} = 13$

3. Change each of the following fractions into equivalent fractions having the denominator 36 :

Ans. (a) $\frac{1}{2}$ (b) $\frac{3}{4}$

$= \frac{1 \times 18}{2 \times 18}$ $= \frac{3 \times 9}{4 \times 9}$

$= \frac{18}{36}$ $= \frac{27}{36}$

(c) $\frac{2}{9}$ (d) $\frac{5}{12}$

$= \frac{2 \times 4}{9 \times 4}$ $= \frac{5 \times 3}{12 \times 3}$

$= \frac{8}{36}$ $= \frac{15}{36}$

(e) $\frac{10}{72}$ (f) $\frac{33}{108}$

$= \frac{10 \div 2}{72 \div 2}$ $= \frac{33 \div 3}{108 \div 3}$

$= \frac{5}{36}$ $= \frac{11}{36}$

(g) $\frac{28}{144}$ (h) $\frac{104}{3744}$

$= \frac{28 \div 4}{144 \div 4}$ $= \frac{104 \div 104}{3744 \div 104}$

$= \frac{7}{36}$ $= \frac{1}{36}$

4. Change each of the following into equivalent fractions having the numerator 48 :

Ans. (a) $\frac{8}{9}$
$= \frac{8 \times 6}{9 \times 6}$
$= \frac{48}{54}$

(b) $\frac{4}{3}$
$= \frac{4 \times 12}{3 \times 12}$
$= \frac{48}{36}$

(c) $\frac{12}{13}$
$= \frac{12 \times 4}{13 \times 4}$
$= \frac{48}{52}$

(d) $\frac{8}{19}$
$= \frac{8 \times 6}{19 \times 6}$
$= \frac{48}{114}$

(e) $\frac{96}{100}$
$= \frac{96 \div 2}{100 \div 2}$
$= \frac{48}{50}$

(f) $\frac{144}{243}$
$= \frac{144 \div 3}{243 \div 3}$
$= \frac{48}{81}$

(g) $\frac{192}{240}$
$= \frac{192 \div 4}{240 \div 4}$
$= \frac{48}{60}$

(h) $\frac{288}{336}$
$= \frac{288 \div 6}{336 \div 6}$
$= \frac{48}{56}$

5. (a) $8 = \frac{8}{7}$
$= \frac{8 \times 7}{1 \times 7}$
$= \frac{56}{7}$

(b) $5 = \frac{5}{1}$
$= \frac{5 \times 9}{1 \times 9}$
$= \frac{45}{9}$

(c) $2 = \frac{2}{1}$
$= \frac{2 \times 13}{1 \times 13}$
$= \frac{26}{13}$

6. Which of the following fractions are equivalent :

Ans. (a) $\frac{1}{3}$ and $\frac{4}{12}$
$= \frac{1}{3} \times \frac{4}{12}$
$= \frac{1 \times 12}{3 \times 4} = \frac{12}{12}$
$\therefore$ equivalent

(b) $\frac{5}{9}$ and $\frac{20}{36}$
$= \frac{5}{9} \times \frac{20}{36}$
$= \frac{5 \times 36}{9 \times 20} = \frac{180}{180}$
$\therefore$ equivalent

(c) $\frac{2}{5}$ and $\frac{8}{20}$
$= \frac{2}{5} \times \frac{8}{20}$
$= \frac{2 \times 20}{5 \times 8} = \frac{40}{40}$
$\therefore$ equivalent

(d) $\frac{3}{6}$ and $\frac{6}{15}$
$= \frac{3}{6} \times \frac{6}{15}$
$= \frac{3 \times 15}{6 \times 6} = \frac{45}{36}$
$\therefore$ not equivalent

(e) $\frac{8}{13}$ and $\frac{32}{52}$
$= \frac{8}{13} \times \frac{32}{52}$
$= \frac{8 \times 52}{13 \times 32}$
$= \frac{416}{416}$
$\therefore$ equivalent

(f) $\frac{3}{4}$ and $\frac{3 \times 4}{4 \times 4}$
$\frac{3}{4}$ and $\frac{12}{16}$
$= \frac{3}{4} \times \frac{12}{16}$
$= \frac{3 \times 16}{4 \times 12}$
$= \frac{48}{48}$
$\therefore$ equivalent

7. Change of the following fractions to like fractions :

Ans. (a) $\frac{1}{4}, \frac{1}{10}$
LCM of 4 and 10 = 20
So, $\frac{1 \times 5}{4 \times 5} = \frac{5}{20}$
and $\frac{1 \times 2}{10 \times 2} = \frac{2}{20}$

(b) $\frac{7}{12}, \frac{8}{15}$
LCM of 12 and 15 = 60
Now, $\frac{7 \times 5}{12 \times 5} = \frac{35}{60}$
and $\frac{8 \times 4}{15 \times 4} = \frac{32}{60}$

(c) $\frac{3}{5}, \frac{4}{15}$
LCM of 5 and 15 = 15
Now, $\frac{3 \times 3}{5 \times 3} = \frac{9}{15}$
and $\frac{4 \times 1}{15 \times 1} = \frac{4}{15}$

(d) $\frac{2}{7}, \frac{3}{14}, \frac{5}{28}$
LCM of 7, 14 and 28 = 28
$\frac{2 \times 4}{7 \times 4} = \frac{8}{28}$,
$\frac{3 \times 2}{14 \times 2} = \frac{6}{28}$,
$\frac{5 \times 1}{28 \times 1} = \frac{5}{28}$

(e) $\frac{3}{8}, \frac{7}{16}, \frac{9}{32}$
LCM of 8, 16 and 32 = 32
$\frac{3 \times 4}{8 \times 4} = \frac{12}{32}$,
$\frac{7 \times 2}{16 \times 2} = \frac{14}{32}$,
$\frac{9 \times 1}{32 \times 1} = \frac{9}{32}$

(f) $\frac{2}{15}, \frac{3}{25}, \frac{7}{30}$
LCM of 15, 25 and 30 = 150
$\frac{2 \times 10}{15 \times 10} = \frac{20}{150}$,
$\frac{3 \times 6}{25 \times 6} = \frac{18}{150}$,
$\frac{7 \times 5}{30 \times 5} = \frac{35}{150}$

Worksheet

2. Colour :
Colour yourself.

1. How many parrots do you use see in the picture?
   Ans. 4
2. How many parrots are green?
   Ans. 2