



# Knowing Our Numbers

1. (a) 2909 (b) 1009  
 $2909 + 1 = 2910$   $109 + 1 = 1010$   
 (c) 16900  
 $16900 + 1 = 16901$
2. (a) 9090 (b) 2501  
 $9090 - 1 = 9089$   $2501 - 1 = 2500$   
 (c) 888  
 $888 - 1 = 887$
3. (a) 84855 or 84856  
 84856 is greater than 84855  
 (b) 435570 or 98999  
 435570 is greater than 98999
4. (a) 90504, 90405 (b) 6017, 100017  
 $90504 > 90405$   $6014 < 100017$
5. Ascending order  
 (a) 1728, 3375, 9261, 2744, 8000, 74088  
 1728, 2744, 3375, 8000, 9261, 74088  
 (b) 23409, 45796, 11881, 385641, 137584  
 11881, 23409, 45796, 137584, 385641
6. Descending order  
 (a) 1036, 4761, 164836, 258064, 107584  
 258064, 164836, 107584, 4761, 1036  
 (b) 9801, 88804, 275259, 267289, 46656  
 275259, 267289, 88804, 46656, 9801
7. (a) 10002 (b) 10023 (c) 12345
8. (a) Smallest no. = 1025679  
 Largest no. = 9765210
9. (a) 99887 (b) 98766 (c) 98765
10. The first 7 digit number is 1000000  
 The last 7 digit number is 9999999  
 So, the number of digit number is  
 $(9999999 - 1000000) + 1 = 9000000$
11. Smallest number = 10368  
 Largest number = 984320

1. (a) 1 (b) greatest (c) 500000  
 (d) Billions (e) 100 (f) 0

2. (a) 4359263

**India system—**

Forty three lakh fifty nine thousand two hundred sixty three

- (b) 3626009

Thirty six lakh twenty six thousand nine.

- (c) 627105

Six lakh twenty seven thousand are hundred five3.

3. (a) 1234987

**International System**

One million two hundred thirty four thousand nine hundred and eighty seven

- (b) 798231

Seven hundred ninety eight thousand two hundred and thirty one

- (c) 64075114

Six four million seventy five thousand one hundred and fourteen.

4. (a) 38,456,219,365 (b) 4,93,46,895

- (c) 5,62,58,270 (d) 8,30,025 (e) 65,035

5. (a) 80,543

$$8 \times 10,000 + 0 + 5 \times 100 + 4 \times 10 + 3 \times 1$$

- (b) 10,08,623

$$1 \times 1000000 + 0 + 0 + 8 \times 1000 + 6 \times 100 + 2 \times 10$$

$$+ 3 \times 1$$

6. (a)  $8 \times 1000 + 4 \times 100 + 3 \times 1 = 8403$

- (b)  $8 \times 10000 + 9 \times 1000 + 5 \times 10 + 8 \times 1 = 89,058$

7. Using the digit 4, 0 and 7 we form 4 digit as  
 407,470,704,740

8. In number 7626541 place value of 6 and 5 is

Place value of 6 is = 6,00,000

Place value of 5 is = 500

9. Largest six digit number is = 999999

Predecessor of 9999 is = 999999

$$- 1$$

$$\underline{999998}$$

10. Greatest 7 digit number having three different digit is  
 9999987

1. (a) 55 = LV

- (b) 64 = LXIV

- (c) 45 = XLV

- (d) 47 = XLVII

- (e) 81 = LXXXI

- (f) 99 = XCIX

- (g) 97 = XCVII

- (h) 1589 = MDLXXXIX

- (i) 363 = CCCLXIII

- (j) 991 = CMXCI

- (k) 1407 = MCDVII

- (l) 3919 = MMMCMXIX

2. (a) XCV = 95

- (b) XVII = 17

- (b) CDXLIX = 449

- (d) MCX = 1110

- (e) LI = 51                      (f) XCII = 92  
 (g) CLXXXVII = 187        (h) CCLXXXIII = 383  
 (i) XXIV = 24                    (j) CCCXIII = 313  
 (k) MDCCXXV = 1725        (l) MMMDXXI = 3521

3. (a) > (b) < (c) > (d) < (e) < (f) <

1. (a) 47  
 Round off of 47 is 50  
 (b) 3818  
 Round off of 3818 is 3820  
 (c) 3642  
 Round off of 3642 is 36400  
 (d) 556  
 Round off of 556 is 560  
 (e) 8444  
 Round off of 8444 is 8440  
 (f) 1895  
 Round off of 1895 is 1900

2. (a) 646  
 Round off of 646 is 600  
 (b) 3057  
 Round off of 3057 is 3100  
 (c) 19,580  
 Round off of 19580 is 19600  
 (d) 4561  
 Round off of 4561 is 4600  
 (e) 78,520  
 Round off of 78,520 is 78,500  
 (f) 64,559  
 Round off of 64,559 is 64,600

3. (a) 65,700  
 Round off of 65,700 is 66,000  
 (b) 6936  
 Round off of 6936 is 7000  
 (c) 2321  
 Round off of 2321 is 2000  
 (d) 9189  
 Round off of 9189 is 9000  
 (e) 49,955  
 Round off of 49,955 is 50,000  
 (f) 853,451  
 Round off of 8,53,000

4. (a) 18589  
 Round off of 18,589 to nearest ten is = 18590  
 Round off of 18589 to nearest hundred is = 18600  
 Round off of 18589 to nearest thousand is = 19000  
 (b) 14,243  
 Round off of 14,243 to nearest ten is = 14,240  
 Round off of 14,243 to nearest hundred is = 14200

Round off of 14,243 to nearest thousand is = 14000

- (c) 1,27,698  
 Round off of 1,27,698 to nearest ten is = 1,27,700  
 Round off of 1,27,698 to nearest hundred is = 1,27,700  
 Round off of 1,27,698 to nearest thousand is = 1,28,000

1. (a) 526  
 Round off of 526 is 530  
 (b) 643  
 Round off of 643 is 640  
 (c) 722  
 Round off of 722 is 720  
 (d) 899  
 Round off of 899 is 900  
 2. (a) 683  
 Round off of 683 is 700  
 (b) 1722  
 Round off of 1722 is 1700  
 (c) 9277  
 Round off of 9277 is 9300  
 (d) 897  
 Round off of 897 is 900  
 3. (a) 1793  
 Round off of 1793 is 2000  
 (b) 7722  
 Round off of 7722 is 8000  
 (c) 1287  
 Round off of 1287 is 1000  
 (d) 8822  
 Round off of 8822 is 9000  
 4. (a) 58 + 43

$$\begin{array}{r} \textcircled{1} \\ 68 \longrightarrow \text{Round off is } 60 \\ + 43 \longrightarrow \text{Round off is } 40 \\ \hline 101 \\ \hline 100 \end{array}$$

- (b) 68 + 13

$$\begin{array}{r} \textcircled{1} \\ 68 \longrightarrow \text{Round off is } 70 \\ + 13 \longrightarrow \text{Round off is } 10 \\ \hline 81 \\ \hline 80 \end{array}$$

- (c) 96 + 59

$$\begin{array}{r} \textcircled{1} \\ 96 \longrightarrow \text{Round off is } \\ + 59 \longrightarrow \text{Round off is } \\ \hline 155 \end{array}$$

(d)  $14 + 68$

$$\begin{array}{r} \textcircled{1} \\ 14 \longrightarrow \text{Round off is } 10 \\ + 68 \longrightarrow \text{Round off is } 70 \\ \hline 82 \qquad \qquad \qquad \underline{80} \end{array}$$

5. (a)  $336 + 798$

$$\begin{array}{r} \textcircled{1}\textcircled{0} \\ 336 \longrightarrow \text{Round off is } 300 \\ + 798 \longrightarrow \text{Round off is } + 800 \\ \hline 1134 \qquad \qquad \qquad \underline{1100} \end{array}$$

(b)  $5238 + 1470$

$$\begin{array}{r} \textcircled{1} \\ 5238 \longrightarrow \text{Round off is } 5200 \\ + 1470 \longrightarrow \text{Round off is } + 1500 \\ \hline 6708 \qquad \qquad \qquad \underline{6700} \end{array}$$

(c)  $189 + 325$

$$\begin{array}{r} \textcircled{1} \\ 189 \longrightarrow \text{Round off is } 200 \\ + 325 \longrightarrow \text{Round off is } + 300 \\ \hline 514 \qquad \qquad \qquad \underline{500} \end{array}$$

(d)  $498 + 111$

$$\begin{array}{r} \textcircled{1} \\ 498 \longrightarrow \text{Round off is } 500 \\ + 111 \longrightarrow \text{Round off is } + 100 \\ \hline 609 \qquad \qquad \qquad \underline{600} \end{array}$$

6. (a)  $83837 + 13469 + 23567$

$$\begin{array}{r} \textcircled{1}\textcircled{0}\textcircled{1}\textcircled{2} \\ 83837 \longrightarrow \text{Round off is } 84000 \\ + 13469 \longrightarrow \text{Round off is } + 13000 \\ + 23567 \longrightarrow \text{Round off is } 24000 \\ \hline 1,20,873 \qquad \qquad \qquad \underline{1,21,000} \end{array}$$

(b)  $57701 + 11385 + 23599$

$$\begin{array}{r} \textcircled{1}\textcircled{0}\textcircled{0}\textcircled{1} \\ 57701 \longrightarrow \text{Round off is } 58,000 \\ + 11385 \longrightarrow \text{Round off is } + 11,000 \\ + 23599 \longrightarrow \text{Round off is } 24,000 \\ \hline 92685 \qquad \qquad \qquad \underline{93,000} \end{array}$$

7. (a)  $63 - 19$

$$\begin{array}{r} \textcircled{5} \textcircled{13} \\ \cancel{6} \cancel{3} \longrightarrow \text{Round off is } 60 \\ - 19 \longrightarrow \text{Round off is } - 20 \\ \hline 44 \qquad \qquad \qquad \underline{40} \end{array}$$

(b)  $79 - 32$

$$\begin{array}{r} 79 \longrightarrow \text{Round off is } 80 \\ - 32 \longrightarrow \text{Round off is } - 30 \\ \hline 47 \qquad \qquad \qquad \underline{50} \end{array}$$

(c)  $81 - 59$

$$\begin{array}{r} \textcircled{8} \textcircled{11} \\ \cancel{8} \cancel{1} \longrightarrow \text{Round off is } 90 \\ - 59 \longrightarrow \text{Round off is } - 60 \\ \hline 32 \qquad \qquad \qquad \underline{30} \end{array}$$

(d)  $117 - 97$

$$\begin{array}{r} 117 \longrightarrow \text{Round off is } 120 \\ - 97 \longrightarrow \text{Round off is } - 100 \\ \hline 20 \qquad \qquad \qquad \underline{20} \end{array}$$

8. (a)  $778 - 317$

$$\begin{array}{r} 778 \longrightarrow \text{Round off is } 800 \\ - 317 \longrightarrow \text{Round off is } - 300 \\ \hline 461 \qquad \qquad \qquad \underline{500} \end{array}$$

(b)  $867 - 171$

$$\begin{array}{r} \textcircled{7} \textcircled{16} \\ \cancel{8} \cancel{6} \cancel{7} \longrightarrow \text{Round off is } 900 \\ - 171 \longrightarrow \text{Round off is } - 200 \\ \hline 696 \qquad \qquad \qquad \underline{700} \end{array}$$

(c)  $7359 - 2323$

$$\begin{array}{r} 7359 \longrightarrow \text{Round off is } 7400 \\ - 2323 \longrightarrow \text{Round off is } - 2300 \\ \hline 5036 \qquad \qquad \qquad \underline{5100} \end{array}$$

(d)  $3619 - 1101$

$$\begin{array}{r} 3619 \longrightarrow \text{Round off is } 3600 \\ - 1101 \longrightarrow \text{Round off is } - 1100 \\ \hline 2518 \qquad \qquad \qquad \underline{2500} \end{array}$$

9. (a)  $53836 - 27889$

$$\begin{array}{r} \textcircled{4} \textcircled{12} \textcircled{17} \textcircled{12} \textcircled{16} \\ \cancel{5} \cancel{3} \cancel{8} \cancel{3} \cancel{6} \longrightarrow \text{Round off is } \textcircled{4} \textcircled{14} \\ - 27889 \longrightarrow \text{Round off is } - 28000 \\ \hline 25947 \qquad \qquad \qquad \underline{26000} \end{array}$$

(b)  $88008 - 66666$

$$\begin{array}{r} \textcircled{7} \textcircled{9} \textcircled{11} \\ \cancel{8} \cancel{8} \cancel{0} \cancel{0} \cancel{8} \longrightarrow \text{Round off is } 88000 \\ - 66666 \longrightarrow \text{Round off is } - 67000 \\ \hline 21342 \qquad \qquad \qquad \underline{21000} \end{array}$$

10. (a)  $16 \times 39$

$$\begin{array}{r} 16 \longrightarrow \text{Round off } 20 \\ 39 \longrightarrow \text{Round off } \times 40 \\ \hline 00 \\ + 80 \times \\ \hline 800 \end{array}$$

$$\begin{array}{r}
 (b) \ 28 \times 63 \\
 28 \longrightarrow \text{Round off } 30 \\
 63 \longrightarrow \text{Round off } \times 60 \\
 \quad \quad \quad 00 \\
 \quad \quad \quad +180 \times \\
 \hline
 \quad \quad \quad 1800
 \end{array}$$

$$\begin{array}{r}
 (c) \ 51 \times 49 \\
 51 \longrightarrow \text{Round off } 50 \\
 49 \longrightarrow \text{Round off } \times 50 \\
 \quad \quad \quad 00 \\
 \quad \quad \quad +250 \times \\
 \hline
 \quad \quad \quad 2500
 \end{array}$$

$$\begin{array}{r}
 (d) \ 36 \times 63 \\
 36 \longrightarrow \text{Round off } 40 \\
 63 \longrightarrow \text{Round off } \times 60 \\
 \quad \quad \quad 00 \\
 \quad \quad \quad +240 \times \\
 \hline
 \quad \quad \quad 2400
 \end{array}$$

$$\begin{array}{r}
 11. (a) \ 509 \times 189 \\
 509 \longrightarrow \text{Round off } 500 \\
 189 \longrightarrow \text{Round off } \times 200 \\
 \quad \quad \quad 000 \\
 \quad \quad \quad 000 \times \\
 \quad \quad \quad +1000 \times \times \\
 \hline
 \quad \quad \quad 1,00,000
 \end{array}$$

$$\begin{array}{r}
 (b) \ 294 \times 123 \\
 294 \longrightarrow \text{Round off } 300 \\
 123 \longrightarrow \text{Round off } \times 100 \\
 \quad \quad \quad 000 \\
 \quad \quad \quad 000 \times \\
 \quad \quad \quad +300 \times \times \\
 \hline
 \quad \quad \quad 30,000
 \end{array}$$

$$\begin{array}{r}
 (c) \ 412 \times 178 \\
 412 \longrightarrow \text{Round off } 400 \\
 178 \longrightarrow \text{Round off } \times 200 \\
 \quad \quad \quad 000 \\
 \quad \quad \quad 000 \times \\
 \quad \quad \quad +800 \times \times \\
 \hline
 \quad \quad \quad 80,000
 \end{array}$$

$$(d) \ 111 \times 777$$

$$\begin{array}{r}
 111 \longrightarrow \text{Round off } 100 \\
 777 \longrightarrow \text{Round off } \times 800 \\
 \quad \quad \quad 000 \\
 \quad \quad \quad 000 \times \\
 \quad \quad \quad +800 \times \times \\
 \hline
 \quad \quad \quad 80,000
 \end{array}$$

$$\begin{array}{r}
 12. (a) \ 627 \div 23 \\
 23 \overline{)627} \ 27.2 \\
 \underline{-46} \phantom{0} \\
 167 \\
 \underline{-161} \\
 0060 \\
 \underline{-46} \\
 14
 \end{array}$$

27.2  $\longrightarrow$  Round off is 30

$$\begin{array}{r}
 (b) \ 986 \div 49 \\
 49 \overline{)986} \ 20.12 \\
 \underline{-98} \phantom{0} \\
 0060 \\
 \underline{-49} \\
 110 \\
 \underline{-98} \\
 12
 \end{array}$$

20.12  $\longrightarrow$  Round off is 20

$$\begin{array}{r}
 (c) \ 725 \div 23 \\
 23 \overline{)725} \ 31.5 \\
 \underline{-69} \phantom{0} \\
 35 \\
 \underline{-23} \\
 120 \\
 \underline{-115} \\
 5
 \end{array}$$

31.5  $\longrightarrow$  Round off is 30

$$\begin{array}{r}
 (d) \ 184 \div 23 \\
 23 \overline{)184} \ 8 \\
 \underline{-184} \\
 0
 \end{array}$$

8  $\longrightarrow$  Round off is 10



# Whole Numbers

1. Numbers 0 to 1, 2, 3, ..... so on are all whole numbers.  
So there is no largest whole numbers exists.

2. Successor of

(a) 2,35,679	(b) 7,86,420	(c) 9,80,099
$\begin{array}{r} +1 \\ \hline 2,35,680 \end{array}$	$\begin{array}{r} +1 \\ \hline 7,86,421 \end{array}$	$\begin{array}{r} +1 \\ \hline 9,80,100 \end{array}$

3. Predecessor of

(a) 5,67,000	(b) 34,59,080	(c) 89,00,120
$\begin{array}{r} -1 \\ \hline 5,66,999 \end{array}$	$\begin{array}{r} -1 \\ \hline 34,59,079 \end{array}$	$\begin{array}{r} -1 \\ \hline 89,00,119 \end{array}$

4. (a) 387;378

No 378 is the smallest no. so it is on the left of the other number on the numbers line.

$$387 > 378$$

- (b) 1,001; 1,101

No. 101 is the smallest no. So it is on the left of the other number on the number line.

$$1,001 < 1,101$$

- (c) 3,456 ; 6,543

No, 3456 is the smallest no. so it is on the left of the other no. on the number line

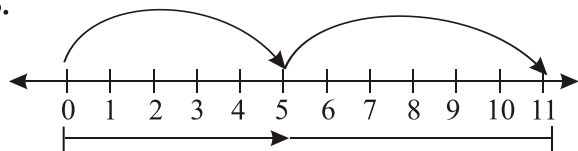
$$3456 < 6543$$

- (d) 36,789 ; 3,67,899

No. 36,789 is the smallest no, so it is on the left of the other no. on the number line

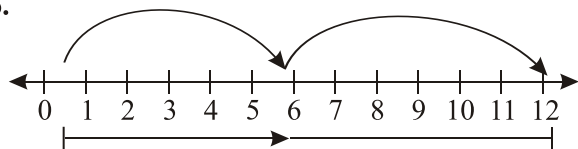
$$36,789 < 3,67,899$$

5.



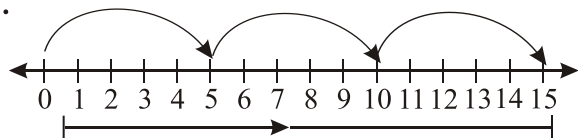
Clearly  $5 + 6 = 11$

6.



Clearly  $9 - 5 = 4$

7.



Clearly  $5 \times 3 = 15$

1. (a)  $9,876 + 124 + 1,000 = 1,000 + 124 + 9,876$

(b)  $8,769 + 3,000 + 231 = 231 + 3,000 + 8,769$

2. (a)  $1 + 2 + 3 + 4 + 5 + 95 + 96 + 97 + 98 + 99$

$(1+2) + (3+4) + (5+93) + (96+97) + (98+99)$

$= 3 + 7 + 100 + 193 + 197$

$= 10 + 293 + 197$

$= 500$

(b)  $21 + 22 + 23 + 24 + 25 + 75 + 76 + 77 + 78 + 79$

$= (21+22) + (23+24) + (25+75) + (76+77)$

$+ (78+79)$

$= 43 + 47 + 100 + 153 + 157$

$= (43+47) + (100+153) + 157$

$= 90 + 253 + 157$

$= 500$

3. (a)  $238 \times 103$

$= 238 \times (100 + 3)$

$= 238 \times 100 + 238 \times 3$

$= 23800 + 714 = 24,514$

(b)  $154 \times 99$

$= 154 \times (90 + 9)$

$= 154 \times 90 + 154 \times 9$

$= 13,860 + 1386 = 15,246$

4. (a)  $250 + 35 \times 40$

$250 \times (35 \times 40)$

$= 250 \times 1,400 = 3,50,000$

(b)  $125 \times 60 \times 8$

$= 125 \times (60 \times 8)$

$= 125 \times 480 = 60,000$

5. (a)  $497 \times 37 + 497 \times 13$

$= 497 \times (37 + 13)$

$= 497 \times 50 = 24,850$

(b)  $8126 \times 169 - 8126 \times 69$

$= 8126 \times (169 - 69)$

$= 8,126 \times 100 = 8,12,600$

6.  $6,750 \div 13$

$$13 \overline{)6750} \begin{matrix} 519 \\ -65 \\ \hline 25 \\ -13 \\ \hline 120 \\ -117 \\ \hline 30 \end{matrix}$$

Dividend = Divisor  $\times$  Quotient  
+ Remainder

$6750 = 13 \times 519 + 3$

$6750 = 6,747 + 3$

$6750 = 6,750$

7. In number 6,43,590 the digits 3 and 9 were interchanged by mistake

So the no formed by mistake is = 6,49,530

Difference between two numbers are

6,49,530

$-6,43,590$

$\hline 5,940$

8. Smallest five digit number = 10000

Largest three digit number = -999

$\hline 9001$

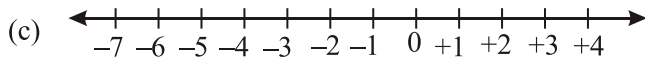
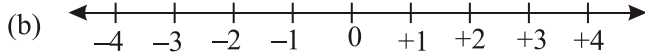
9. Constant speed of a bus is = 96 km per hour

Distance cover in 14 hrs =  $96 \times 14$

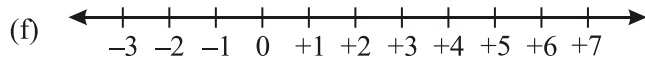
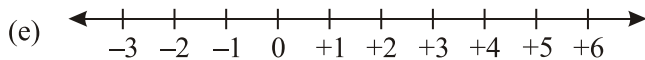
= 1,344 km

10. There will be 3 digits in the successor of 3 digit number.  
But if the 3 digit number is 999 then there will be 4 digits.

1. (a)  $0 < 4$  (b)  $-25 < 0$   
 (c)  $-35 > -75$  (d)  $213 > 80$   
 (e)  $-22 < 14$  (f)  $-412 < 412$   
 (g)  $-1523 > -1823$  (h)  $-940 < 0$   
 (i)  $-1000 < -2$
2. (a)  $-5, -3, 0, 1, 2$  (b)  $-5, -4, -3, 0, 1, 4$   
 (c)  $-90, -70, -35, -15, -2, 1, 8$   
 (d)  $-40, -15, -2, 0, 4, 25$   
 (e)  $-315, -213, -25, -5, 0, 2, 12, 20$   
 (f)  $-885, -720, -36, 0, 7, 42, 44$



(d)



4. (a)  $|-100|$   
 $-100$  is negative integers, so its absolute value is opposite numbers, therefor  
 $|-100| = 100$

(b)  $|+45|$   
 $+45$  is a positive integers  
 so, absolute value of  $+45 = 45$

(c) Absolute value of  $+40$   
 $+40$  is a positive integer  
 so, absolute value of  $+40 = 40$

(d) Absolute value of  $-55$   
 $-55$  is a negative integer  
 so absolute value in a opposite number  
 $-55 = 55$

(e) Absolute value of  $-30$   
 $-30$  is a negative integer  
 so absolute value is opposite number  
 $-30 = 30$

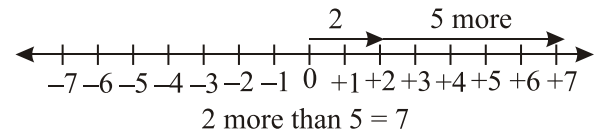
(f)  $|-1150|$   
 $-1150$  is a negative integer  
 so absolute value is opposite number

$$|-1150| = 1150$$

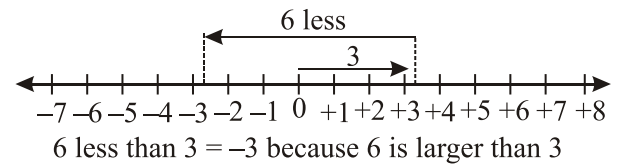
(g)  $-|115 - 125|$  (h)  $-|-34|$   
 $-|115 - 125| = -1$   $-34$

(i)  $26 - |-13| + |-13|$   
 $26 + 13 + |-13|$   
 $= 36 + |-13|$   
 $= 39 - 13 = 26$

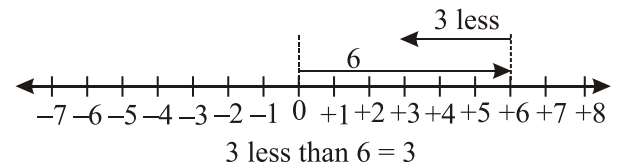
5. (a) 5 more than 2



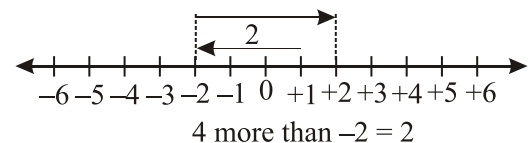
- (b) 6 less than 3



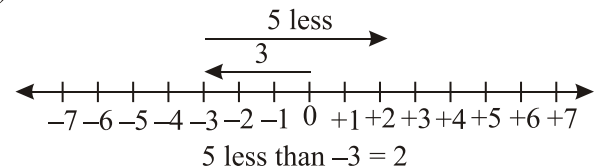
- (c) 3 less than 6



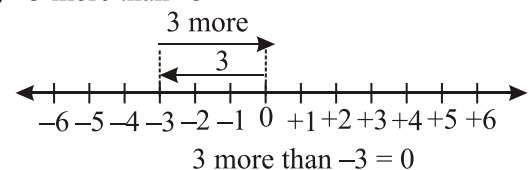
- (d) 4 more than  $-2$



- (e) 5 less than  $-3$



- (f) 3 more than  $-3$



6. (a) Gain of ₹ 25      (b) Withdrawal of ₹ 35  
       = +25                        = -35  
 (c) 45 meter towards north  
       +45 m  
 (d) 10°C below freezing point  
       -10° C  
 (e) Loss of ₹ 15  
       = -₹ 15  
 (f) Ascending height 50 meters  
       = +50 metre

1. (a) True (b) True (c) False (d) False (e) False

2. (a)  $-8+8=0$       (b)  $7+(-7)=0$   
 (c)  $15+(-6)=9$       (d)  $-5+(-7)=-12$   
 (e)  $-25+10=-15$       (f)  $-6+14=8$

3. (a) -89

$$\begin{array}{r} -89 \\ +1 \\ \hline -88 \end{array} \quad \therefore +, - = - \text{ so } 89 - 1 = 88$$

(b) 46

$$\begin{array}{r} 46 \\ +1 \\ \hline 47 \end{array}$$

(c) -64

$$\begin{array}{r} -64 \\ +1 \\ \hline -63 \end{array} \quad \therefore +, - = - \text{ so } 64 - 1 = 63$$

(d) 23

$$\begin{array}{r} 23 \\ +1 \\ \hline 24 \end{array}$$

(e) -1

$$\begin{array}{r} -1 \\ +1 \\ \hline 0 \end{array} \quad \therefore +, - = - \text{ so } -1 + 1 = 0$$

(f) -125

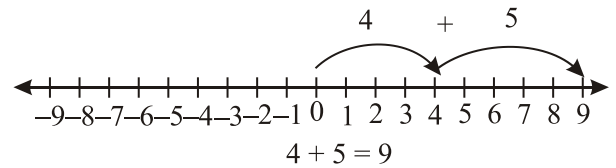
$$\begin{array}{r} -125 \\ +1 \\ \hline -124 \end{array} \quad \therefore +, - = - \text{ so } 125 - 1 = 124$$

(g) 0

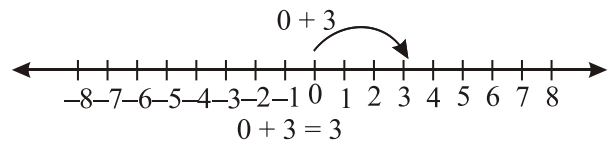
$$\begin{array}{r} 0 \\ +1 \\ \hline 0 \end{array}$$

4. (a) 25  
       Additive inverse of = -25  
 (b) -72  
       Additive inverse of = 72  
 (c) -156  
       Additive inverse of = 156  
 (d) 17  
       Additive inverse of = -17  
 (e) -42  
       Additive inverse of = 42  
 (f) 0  
       Additive inverse of 0 is 0 itself.

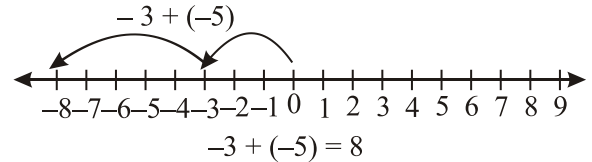
5. (a) 4 + 5



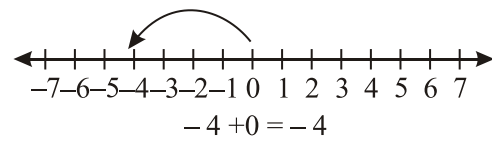
(b) 0 + 3



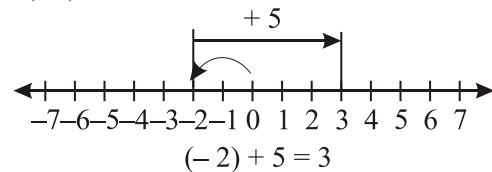
(c) (-3) + (-5)



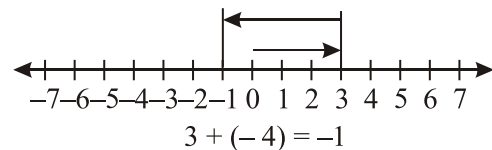
(d) (-4) + 0



(e) (-2) + 5



(f) 3 + (-4)



6. (a)  $(-313) + (-415)$   
 $(-313) = 313 \quad (-415) = 415$   
 So,  $313 + 415 = 728$

Common sign of integers is (-)  
 so  $(-313) + (-415) = -728$

(b)  $(1520) + (1740)$   
 $1520 + 1740 = 3260$

(c)  $990 + (-990)$   
 $990 - 990 = 0 \quad \therefore +, - = -$

(d)  $(-565) + 205$   
 $-565 + 205 = -360$

(e)  $115 + (-385)$   
 $115 - 385 = -270 \quad \therefore +, - = -$

(f)  $0 + (-215)$   
 $0 - 215 = -215 \quad \therefore +, - = -$

7. (a)  $-105 + 310 - 200 + 85 - 35 + 60$   
 $= 205 - 115 + 25$   
 $= 90 + 25 = 115$

(b)  $1164 + (-720) + (-621) + 312$   
 $= 444 + (-319) = 125$

(c)  $|235| + |-170| - |330| - |-115| + 400$

(d)  $-|549| + |-115| - |-95| + 250$   
 $-|434| - |155| = -279$

(e)  $2125 + 0 + (-2125)$   
 $= 2125 - 2125 = 0$

8.  $11 + (-11) = 0 \quad -7 + 7 = 0$   
 $-74 + 74 = 0 \quad 6 + (-6) = 0$   
 $7 + (-7) = 0 \quad 42 + (-42) = 0$   
 $-6 + 6 = 0 \quad -11 + 11 = 0$   
 $74 + (-74) = 0 \quad -42 + 42 = 0$

1. (a) < (b) < (c) < (d) > (e) < (f) <

2. (a)  $-212 - (-112) + 78 - 90$   
 $-100 - 12 = -112$

(b)  $-1099 + 4123 - 2330 - (-1520)$   
 $= 3024 - 810 = 2214$

(c)  $-(1050) - (-2225) + 500 - 400$   
 $-1050 + 2225 + 500 - 400$   
 $= 1175 + 100 = 1275$

(d)  $40 + 60 - (-70) - 30 - 20 + 10 - 5$   
 $100 + 70 - 30 - 20 + 10 - 5$   
 $= 170 - 50 + 10 - 5 = 170 - (-40 - 5)$   
 $-170 - 45 = 125$

(e)  $-1915 - (-1915) + 40 - (-40) - 60$   
 $-1915 + 1915 + 40 + 40 - 60$   
 $= 0 + 80 - 60 = 20$

3. (a) 
$$\begin{array}{r} 35 \\ -1 \\ \hline 34 \end{array}$$
 (b) 
$$\begin{array}{r} -15 \\ -1 \\ \hline -16 \end{array} \quad \therefore -, - = +$$
  
 $\therefore 15 + 1 = -16$

(c) 
$$\begin{array}{r} 0 \\ -0 \\ \hline 0 \end{array}$$
 (d) 
$$\begin{array}{r} 1 \\ -1 \\ \hline 0 \end{array}$$

(e) 
$$\begin{array}{r} -1 \\ + -1 \\ \hline -2 \end{array} \quad \therefore -, - = +$$
  
 $\therefore 1 + 1 = 2$

(f) 
$$\begin{array}{r} -999 \\ + -1 \\ \hline -1000 \end{array} \quad \therefore -, - = +$$
  
 $\therefore 999 + 1 = 1000$

4. (a) 
$$\begin{array}{r} 37 \\ -27 \\ \hline -10 \end{array}$$
 (b) 
$$\begin{array}{r} -150 \\ -0 \\ \hline -150 \end{array}$$
 (c) 
$$\begin{array}{r} -250 \\ -50 \\ \hline -300 \end{array}$$

(d) 
$$\begin{array}{r} 25 \\ -(-15) \\ \hline -10 \end{array}$$
 (e) 
$$\begin{array}{r} -400 \\ -100 \\ \hline -300 \end{array}$$
 (f) 
$$\begin{array}{r} 170 \\ -0 \\ \hline -170 \end{array}$$

(g) 
$$\begin{array}{r} 35 \\ -(-15) \\ \hline -50 \end{array}$$
 (h) 
$$\begin{array}{r} 90 \\ -50 \\ \hline 40 \end{array}$$
 (i) 
$$\begin{array}{r} 70 \\ -0 \\ \hline -70 \end{array}$$

(j) 
$$\begin{array}{r} -100 \\ -200 \\ \hline -100 \end{array}$$

5. Sun of two integers is 95  
 One of the integers is  $= -45$   
 Other one is  $= -95$

$$\begin{array}{r} -(-45) \\ \hline -140 \end{array}$$

6. Distance from school to house towards north is  $= 5$  km  
 Distance from school to house which he covered from south is  $= 2$  km

Remaining distance  $= 5 - (-2)$   
 $= 7$  km

7. A man invested is a deal  $= ₹ 10,000$   
 He incurred a profit on the deal  $= ₹ 1500$   
 His net amount after the deal is over  $= ₹ 11,500$

8. Two integers difference  $= -20$   
 One integer no  $= 35$   
 $\therefore$  1st integer is 35 and the difference of two integers is  $-20$

$\therefore 35 - 20 = 15$   
 The sum of two integers is  $35 + 15 = 50$

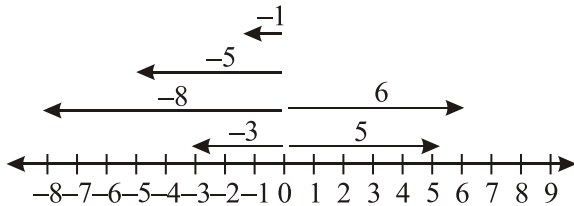
9. ₹ is a bank account  $= ₹ 5000$   
 He withdraws rupees  $= - ₹ 1500$

$$\begin{array}{r} ₹ 5000 \\ - ₹ 1500 \\ \hline ₹ 3500 \end{array}$$



10. Let  $a=9$                        $b=10$   
 (as  $a$  is predecessor *i.e.*,  $-1$  of  $b$ )  
 $a - b \Rightarrow 9 - 10 = -1$   
 hence  $a - b = -1$

1.  $50 - (-40) - (-5)$   
 $= 50 + 40 + 5 = 95$   
 2.  $+3 - 3$  subtract  
 $+3 - 3 = 0$   
 3.  $(-7) + (-18)$   
 $-7 - 18 = -25$   
 4.



5. **Subtract**  
 $+35$  from  $-17$   
 $-17 - 35 = -(17 + 35) = -52$   
 6. Value of  $(-7) + (-8) - (-25)$   
 $-7 - 8 + 25 = (-7 - 8) + 25$   
 $= -15 + 25 = 10$   
 7.  $(-7) + (+8) = ?$   
 $-7 + 8 = 1$   
 8.  $(-9) + (+15) = ?$   
 $-9 + 15 = 6$   
 9.  $(-8) + (-5) + 6 + 17$   
 $(-8 - 5) + (6 + 17) = -13 + 23 = 10$   
 10. Subtract  $(-6)$  from  $-15$   
 $-15 - (-6) = -15 + 6 = -9$



# Factors and Multiples

1. (a) 20                      (b) 36
- |                    |                    |
|--------------------|--------------------|
| $20 \times 1 = 20$ | $36 = 1 \times 36$ |
| $2 \times 10 = 20$ | $36 = 2 \times 18$ |
| $4 \times 5 = 20$  | $36 = 3 \times 12$ |
| $10 \times 2 = 20$ | $36 = 4 \times 9$  |
| $1 \times 20 = 20$ | $36 = 6 \times 6$  |
- Therefore 1, 2, 4, 5, 10, 20 are the factors of 20  
 Therefore 1, 2, 3, 4, 6, 9, 12, 18, 36 are factors of 36
- (c) 51  
 $51 = 1 \times 51$   
 $51 = 3 \times 17$   
 Therefore 1, 3, 17, 51 are the factors of 51
- (d) 64  
 $64 = 1 \times 64$                        $64 = 2 \times 32$   
 $64 = 4 \times 16$                        $64 = 8 \times 8$   
 Therefore 1, 2, 4, 8, 16, 32, 64 are factors of 64
- (e) 144  
 $144 = 1 \times 144$                        $144 = 2 \times 72$   
 $144 = 3 \times 48$                        $144 = 4 \times 36$   
 $144 = 6 \times 24$                        $144 = 8 \times 18$   
 $144 = 9 \times 16$                        $144 = 12 \times 12$

Therefore 1, 2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 36, 48, 72 and 144 are factors of 144

- (f) 729  
 $729 = 1 \times 729$                        $729 = 3 \times 243$   
 $729 = 9 \times 81$                        $729 = 27 \times 27$   
 Therefore 1, 3, 9, 27, 81, 243 and 729 are factors of 729
2. (a)  $7 \times 1 = 7$                       (b)  $13 \times 1 = 13$   
 $7 \times 2 = 14$                        $13 \times 2 = 26$   
 $7 \times 3 = 21$                        $13 \times 3 = 39$   
 $7 \times 4 = 28$                        $13 \times 4 = 52$   
 $7 \times 5 = 35$                        $13 \times 5 = 65$
- (c)  $17 \times 1 = 17$                       (d)  $15 \times 1 = 15$   
 $17 \times 2 = 34$                        $15 \times 2 = 30$   
 $17 \times 3 = 51$                        $15 \times 3 = 45$   
 $17 \times 4 = 68$                        $15 \times 4 = 60$   
 $17 \times 5 = 85$                        $15 \times 5 = 75$
3. All the multiples of 11 up to 100  
 $11 \times 1 = 11$                        $11 \times 2 = 22$   
 $11 \times 3 = 33$                        $11 \times 4 = 44$   
 $11 \times 5 = 55$                        $11 \times 6 = 66$   
 $11 \times 7 = 77$                        $11 \times 8 = 88$   
 $11 \times 9 = 99$
4. (a) eighth multiple of 80  
 $80 \times 8 = 640$

- (b) Multiples of 5 between 32 and 62  
 $5 \times 7 = 35$                        $5 \times 8 = 40$   
 $5 \times 9 = 45$                        $5 \times 10 = 50$   
 $5 \times 11 = 55$                        $5 \times 12 = 60$

5. (a) 1748352 is a factor of 87  
because  $87 \div 1748352 = 20,096$   
(b) 13962 is a factor of 39  
because  $39 \div 13962$  is 358

1. (a) F (b) F (c) T (d) F (e) F (g) F (h) T  
2. 1,3,5,7,9,11,13,15,17,19  
3. 42,44,46,48,50,52,54,56,58  
4. 53,59,61,67,71,73,79,83,89,97  
5. Prime numbers less than 30 are 2, 3, 5, 7, 11, 13, 17, 19, 23, 29  
Composite numbers less than 30 are 4,6,8,10,12,14, 15,16,18,20,22,24,25,26,28  
6. Twin prime number between 1 to 100 are  
(3, 5), (5, 7), (11, 13), (17, 19), (29, 31), (41, 43), (59, 61), (71, 73)  
7. (a) 84                      (b) 120  
 $41 + 43 = 84$                        $59 + 61 = 120$   
(c) 36  
 $17 + 19 = 36$   
8. (a) 15                      (b) 13  
 $3 + 5 + 7 = 15$                        $11 + 2 = 13$   
 $13 + 2 = 15$   
(c) 37  
 $23 + 11 + 3 = 37$   
 $19 + 11 + 7 = 37$   
 $17 + 13 + 7 = 37$   
9. (a) 42                      (b) 32  
 $31 + 11 = 42$                        $29 + 3 = 32$   
 $29 + 13 = 42$   
(c) 50  
 $7 + 43 = 50$   
 $47 + 3 = 50$   
10. A twin prime is a prime number that is either 2 less or 2 more than another prime number.

or

Twin prime are these numbers which are prime and having a difference of two (2) between them.  
All twin prime numbers between 1 and 50 are (3, 5), (5, 7), (11, 13), (17, 19), (29, 31), (41, 43)

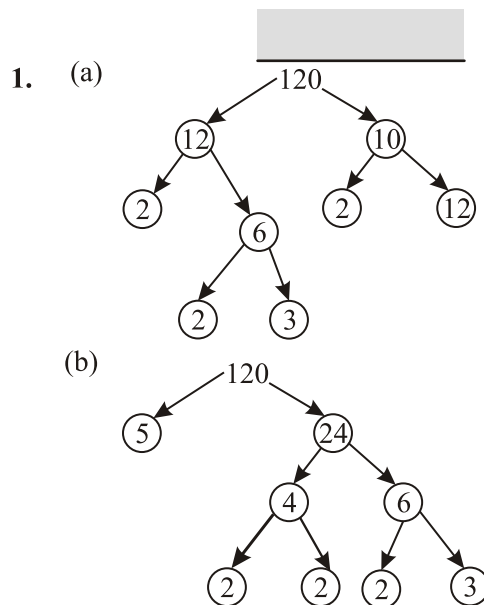
11. Composite numbers between  
(a) 5 and 12                      (b) 6 and 14  
are 6, 8, 9,10                      are 8, 9, 10, 12  
(c) 56 and 60                      (d) 7 and 11  
are 58                      are 8, 9, 10

12. Yes a composite number can be odd.  
Smallest odd composite number is 9

1. (a) F (b) T (c) T (d) F (e) T  
2. (a) 4965  
Given numbers = 4965 Test of divisibility by 5 and 10  
Sum of the digits of 4965 =  $4 + 9 + 6 + 5$   
= 24  
24 is not divisible by 5 and 10  
so 4965 is not divisible by 5 and 10  
But if we divide 4965 by 5 it is divisible.  
(b) 23590  
Given Number = 23590 Test of divisibility by 5 & 10  
Sum of the digits of 23590 =  $2 + 3 + 5 + 9 + 0 = 19$   
19 is not divisible by 5 & 10  
But if we divide 23590 by 5 & 10  
it is divided  
(c) 35368  
Given number = 35368 Test of divisibility by 5 & 10  
Sum of the digits of 5368 =  $3 + 5 + 3 + 6 + 8 = 25$   
25 is divisible by 5  
But it is not divisible by 10  
(d) 72305  
Given number = 72305 Test of divisibility by 5 & 10  
Sum of the digits of 72305 =  $7 + 2 + 3 + 0 + 5 = 17$   
17 is not divisible by 5 & 10  
But if we divided 72605 by 5 it is divisible  
(e) 2350  
Given number = 2350 Test of divisibility by 5 & 10  
Sum of the digits of 2350 =  $2 + 3 + 5 + 0 = 10$   
10 is divisible by 5 & 10  
(f) 1344  
Given no = 1344 Test of divisibility by 5 & 10  
Sum of the digits of 1344 =  $1 + 3 + 4 + 4 = 12$   
12 is not divided by 5 & 10  
3. (a) 352  
Given No. = 352 Test of divisibility by 2, 4 & 8  
Sum of the digit 352 =  $3 + 5 + 2 = 10$   
10 is only divided by 2  
But if we divided 352 by 2, 4 & 8 if is normally divided  
(b) 1838  
Given No. = 1838 Test of divisibility by 2, 4 & 8  
Sum of the digit 1838 =  $1 + 8 + 3 + 8 = 20$   
20 is divided by 2 & 4

- (c) 37780  
Sum of digits  $37780 = 3 + 7 + 7 + 8 + 0 = 25$   
25 is not divided by 2, 4 & 8  
But if we divided 37780 by 2 & 4  
it is normally divided
- (d) 19337  
Sum of the digit  $= 1 + 9 + 3 + 3 + 7 = 23$   
23 is not divided by 2, 4 and 8
- (e) 45350  
Sum of the digit  $= 4 + 5 + 3 + 5 + 0 = 17$   
17 is not divided by 2  
But if we divided 45350 by 2 it is normally divided
4. (a) 733  
Given No. 733 = Test of divisibility by 3 and 9  
Sum of the digit  $733 = 7 + 3 + 3 = 13$   
13 is not divided by 3 & 9
- (b) 10038  
Sum of the digit 10038 is  $1 + 0 + 0 + 3 + 8 = 12$   
12 is only divided by 3
- (c) 20701  
Sum of the digit 20701 is  $2 + 0 + 7 + 0 + 1 = 10$   
10 is not divided by 3 & 9
- (d) 4371  
Sum of the digit  $4371 = 4 + 3 + 7 + 1 = 15$   
15 is only divided by 3
- (e) 64240  
Sum of the digit  $= 6 + 4 + 2 + 4 + 0 = 16$   
16 is only divided by 3
5. (a) No. 6, 10                      (b) 77, 187  
(c) 104, 72                        (d) 108, 342
6. 167 and 283 are prime numbers
7. If a number is divisible by 12, then it is always be divisible by 1, 2, 3, 4, 6, 12
8. 791, 574, 3164 are divisible by 7  
 $\therefore 791 \div 7 = 113$   
 $574 \div 7 = 82$   
 $3164 \div 7 = 452$
9. (a) 3784  
Sum of the digit  $3784 = 3 + 7 + 8 + 4 = 22$   
22 is divisible by 11
- (b) 15350  
sum of the digit  $15350 = 1 + 5 + 3 + 5 + 0 = 14$   
14 is not divisible by 11
- (c) 38442  
sum of the digit  $38442 = 3 + 8 + 4 + 4 + 2 = 21$   
21 is not divisible by 11
- (d) 103081  
sum of the digit  $103081 = 1 + 0 + 3 + 0 + 8 + 1 = 13$   
13 is not divisible by 11

- (e) 769483  
sum of the digit  $769483 = 7 + 6 + 9 + 4 + 8 + 3 = 37$   
37 is not divisible by 11 but if we divide 769483 by 11 directly it can be divided.
10. (a)  $439*7$  is divisible by 9  
sum of the digit  $439*7 = 4 + 3 + 9 + 7 = 23$   
we know that  $23 + 4 = 27$  which is divisible by 9  
Hence, the required digit is 4 replace \* so as to make the number 43947 divided by 9
- (b)  $75*$  is divisible by 4  
sum of the digit  $75* = 7 + 5 = 12$   
we know that 12 is divisible by 4  
Hence, the required digit is 0 replace \* so as to make the number 750 divided by 4
- (c)  $2*345$  is divisible by 11  
sum of the digit  $2*345 = 2 + 3 + 4 + 5 = 14$   
we know that  $14 + 8 = 22$  which is divisible by 11  
Hence, the required digit is 8 replace \* so as to make the number 28345 divided by 11
- (d)  $8*36$  is divisible by 8  
sum of the digit  $8*36 = 8 + 3 + 6 = 17$   
we know that  $17 - 1 = 16$  which is divisible by 8  
Hence, the required digit is 1 replace \* so as to make the number 8136 divided by 8
11. (a)  $379*4$  is divisible by 9  
sum of the digit  $379*4 = 3 + 7 + 9 + 4 = 23$   
we know that  $23 + 4 = 27$  which is divisible by 9  
Hence, the required digit is 4 replace \* so as to make the number 43947 divided by 9
- (b)  $*8769$  is divisible by 9  
sum of the digit  $= 8 + 7 + 6 + 9 = 30$   
we know that  $30 + 6 = 36$  which is divisible by 9  
Hence, the required digit is 6 replace \* so as to make the number 68769 divided by 9



3.  $9999 = 3 \times 3 \times 11 \times 101$

$$\begin{array}{r|l} 3 & 9999 \\ \hline 3 & 3333 \\ \hline 11 & 1111 \\ \hline 101 & 101 \\ \hline & 1 \end{array}$$

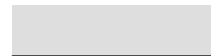
4.  $10000$   
 $= 2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5$

$$\begin{array}{r|l} 2 & 10000 \\ \hline 2 & 5000 \\ \hline 2 & 2500 \\ \hline 2 & 1250 \\ \hline 5 & 625 \\ \hline 5 & 125 \\ \hline 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

5. To be number smallest factors must also be smallest 4 different smallest prime factors are 2, 3, 5, 7 so the number is  $2 \times 3 \times 5 \times 7 = 210$  7.

6.

1. (a) 4, 10



Here, the common factor is 2  
 Therefore the required HCF is 2

(b) 15, 20















































































