(7) Multiples and Factors

Exercise-1

1. To find multiples of a number, we multiply it by 1, 2, 3, 4, ...

(a) $4 \times 1 = 4$, $4 \times 2 = 8$, $4 \times 3 = 12$, $4 \times 4 = 16$, $4 \times 5 = 20$

So, the first five multiples of 4 are 4, 8, 12, 16, 20.

(b) The first five multiples of 7 are

7×1, 7×2, 7×3, 7×4, 7×5 or 7, 14, 21, 28, 35.

(c) The first five multiples of 10 are

10×1, 10×2, 10×3, 10×4, 10×5 or 10, 20, 30, 40, 50.

(d) The first five multiples of 12 are

12×1, 12×2, 12×3, 12×4, 12×5 or 12, 24, 36, 48, 60.

(e) The first five multiples of 15 are

15×1, 15×2, 15×3, 15×4, 15×5 or 15, 30, 45, 60, 75.

(f) The first five multiples of 18 are

18×1, 18×2, 18×3, 18×4, 18×5 or 18, 36, 54, 72, 90.

(g) The first five multiples of 20 are

20×1, 20×2, 20×3, 20×4, 20×5 or 20, 40, 60, 80, 100.

(h) The first five multiples of 23 are

23×1, 23×2, 23×3, 23×4, 23×5 or 23, 46, 69, 92, 115.

(i) The first five multiples of 26 are

26×1, 26×2, 26×3, 26×4, 26×5 or 26, 52, 78, 104, 130.

(j) The first five multiples of 29 are

29×1, 29×2, 29×3, 29×4, 29×5 or 29, 58, 87, 116, 145.

(k) The first five multiples of 33 are

33×1, 33×2, 33×3, 33×4, 33×5 or 33, 66, 99, 132, 165.

(l) The first five multiples of 35 are

35×1, 35×2, 35×3, 35×4, 35×5 or 35, 70, 105, 140, 175.

2. (a) 5 does not divide 28 exactly.

Thus, 28 is not a multiple of 5.

$$\begin{array}{r} 5 \\ 5\overline{)28} \\ -25 \\ \hline 3 \\ \hline \end{array}$$

(b) 9 divides 36 exactly, leaving no remainder.

Thus, 36 is a multiple of 9.

$$\begin{array}{r} 4 \\ 9\overline{)36} \\ -36 \\ \hline 0 \\ \hline \end{array}$$

(c) 8 divides 64 exactly, leaving no remainder.

Thus, 64 is a multiple of 8.

$$\begin{array}{r} 8 \\ 8\overline{)64} \\ -64 \\ \hline 0 \\ \hline \end{array}$$

(d) 7 divides 182 exactly, leaving no remainder.

Thus, 182 is a multiple of 7.

$$\begin{array}{r} 26 \\ 7\overline{)182} \\ -14 \\ \hline 42 \\ -42 \\ \hline 0 \\ \hline \end{array}$$

3. 54, 18, 27, 36 and 63 are multiples of 9.

Exercise-2

1. (a) First 10 multiples of 2 are 2, 4, ⑥, 8, 10, ⑫, 14, 16, ⑱, 20.

First 10 multiples of 3 are 3, ⑥, 9, ⑫, 15, ⑱, 21, 24, 27, 30.

Common multiples of 2 and 3 are 6, 12 and 18.

Lowest common multiple (LCM) of 2 and 3 is 6.

(b) First 10 multiples of 4 are 4, 8, 12, 16, ⑳, 24, 28, 32, 36, ㊵.

First 10 multiples of 5 are 5, 10, 15, ⑳, 25, 30, 35, ㊵, 45, 50.

Common multiples of 4 and 5 are 20 and 40.

Lowest common multiple (LCM) of 4 and 5 is 20.

(c) First 10 multiples of 8 are 8, 16, 24, 32, ㊵, 48, 56, 64, 72, ㊿.

First 10 multiples of 10 are 10, 20, 30, ㊵, 50, 60, 70, ㊿, 90, 100.

Common multiples are 40 and 80.

∴ LCM = 40.

(d) First 10 multiples of 9 are 9, 18, 27, ⑤36⑥, 45, 54, 63, ⑦72⑦, 81, 90.

First 10 multiples of 12 are 12, 24, ㊱36, 48, 60, ㊲72, 84, 96, 108, 120.

Common multiples are 36 and 72.

∴   LCM = 36.

(e) First 10 multiples of 3 are 3, 6, ⑨, 12, 15, ⑱, 21, 24, ㉗, 30.

First 10 multiples of 9 are ⑨, ⑱, ㉗, 36, 45, 54, 63, 72, 81, 90.

Common multiples are 9, 18 and 27.

∴   LCM = 9.

(f) First 10 multiples of 10 are 10, ⑳, 30, ㊵, 50, ㊿60, 70, ㊿80, 90, ⑩⑩

First 10 multiples of 20 are ⑳, ㊵, ㊿, ㊿, ⑩⑩, 120, 140, 160, 180, 200.

Common multiples are 20, 40, 60, 80, and 100.

∴   LCM = 20.

(g) First 10 multiples of 15 are 15, 30, 45, ㊿60, 75, 90, 105, ⑫⑩120, 135, 150.

First 10 multiples of 20 are 20, 40, ㊿60, 80, 100, ⑫⑩120, 140, 160, 180, 200.

Common multiples are 60 and 120.

∴   LCM = 60.

(h) First 10 multiples of 15 are 15, 30, 45, 60, 75, ⑨⑩90, 105, 120, 135, 150.

First 10 multiples of 18 are 18, 36, 54, 72, ⑨⑩90, 108, 126, 144, 162, 180.

Common multiple is 90.

LCM = 90.

2. Multiples of 12 are 12, 24, 36, 48, ㊿60, 72, 84, 96, 108, ⑫⑩120.

Multiples of 15 are 15, 30, 45, ㊿60, 75, 90, 105, ⑫⑩120, 135, 150.

Multiples of 20 are 20, 40, ㊿60, 80, 100, ⑫⑩120, 140, 160, 180, 200.

Common multiples of 12, 15 and 20 are 60 and 120.

∴ LCM = 60.

3. Multiples of 14 are 14, 28, ㊷42, 56, 70, ㊳84, 98, 112, ⑫⑥126, 140.

Multiples of 21 are 21, ㊷42, 63, ㊳84, 105, ⑫⑥126, 147, 168, 189, 210.

Common multiples are 42, 84 and 126.

∴ LCM = 42.

4. 1st common multiple = LCM = 30

3rd common multiple of 6 and 15 = $30 \times 3 = 90$

4th common multiple of 6 and 15 = $30 \times 4 = 120$

5th common multiple of 6 and 15 = $30 \times 5 = 150$.

5. LCM of 2 and 5 = 10

So, the next 5 common multiples of 2 and 5 are

10×2, 10×3, 10×4, 10×5, 10×6 i.e. 20, 30, 40, 50 and 60.

6. (a)

2	32, 40
2	16, 20
2	8, 10
	4, 5

LCM = $2 \times 2 \times 2 \times 4 \times 5 = 160$

(b)

2	36, 40
2	18, 20
	9, 10

LCM = $2 \times 2 \times 9 \times 10 = 360$

(c)

3	30, 45
5	10, 15
	2, 3

LCM = $3 \times 5 \times 2 \times 3 = 90$

(d)

2	15, 36, 40
2	15, 18, 20
3	15, 9, 10
5	5, 3, 10
	1, 3, 2

LCM = $2 \times 2 \times 3 \times 5 \times 3 \times 2 = 360$

(e)

2	18, 24, 45
3	9, 12, 45
3	3, 4, 15
	1, 4, 5

LCM = $2 \times 3 \times 3 \times 4 \times 5 = 360$

(f)

2	20, 30, 50
5	10, 15, 25
	2, 3, 5

LCM = $2 \times 5 \times 2 \times 3 \times 5 = 300$

7. (a) 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78

(b) 9, 18, 27, 36, 45, 54, 63, 72, 81

(c) 18, 36, 54, 72

(d) Lowest common multiple is 18.

   ∴ LCM of 6 and 9 = 18.

Mathematics-4 (Term-1)

Exercise-3

1. **(a)** The possible combinations of 15 are

   $15 = 1 \times 15$, $15 = 3 \times 5$, $15 = 5 \times 3$, $15 = 15 \times 1$

   Thus, factors of 15 are 1, 3, 5 and 15.

   (b) $20 = 1 \times 20$, $20 = 2 \times 10$, $20 = 4 \times 5$, $20 = 5 \times 4$,

   $20 = 10 \times 2$, $20 = 20 \times 1$

   Thus, factors of 20 are 1, 2, 4, 5, 10 and 20.

   (c) $24 = 1 \times 24$, $24 = 2 \times 12$, $24 = 3 \times 8$, $24 = 4 \times 6$,

   $24 = 6 \times 4$, $24 = 8 \times 3$, $24 = 12 \times 2$, $24 = 24 \times 1$

   Thus, factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24.

   (d) $28 = 1 \times 28$, $28 = 2 \times 14$, $28 = 4 \times 7$, $28 = 7 \times 4$,

   $28 = 14 \times 2$, $28 = 28 \times 1$

   Thus, factors of 28 are 1, 2, 4, 7, 14 and 28.

   (e) $32 = 1 \times 32$, $32 = 2 \times 16$, $32 = 4 \times 8$, $32 = 8 \times 4$,

   $32 = 16 \times 2$, $32 = 32 \times 1$

   Thus, factors of 32 are 1, 2, 4, 8, 16 and 32.

   (f) $45 = 1 \times 45$, $45 = 3 \times 15$, $45 = 5 \times 9$, $45 = 9 \times 5$,

   $45 = 15 \times 3$, $45 = 45 \times 1$

   Thus, factors of 45 are 1, 3, 5, 9, 15 and 45.

2. **(a)** $12 \div 1 = 12$, $12 \div 2 = 6$, $12 \div 3 = 4$, $12 \div 4 = 3$

   We do not divide further as 3 is also a factor of 12.

   Thus, factors of 12 are 1, 2, 3, 4, 6 and 12.

   (b) $18 \div 1 = 18$, $18 \div 2 = 9$, $18 \div 3 = 6$,

   $18 \div 4 = 4$ (remainder = 2) $18 \div 5 = 3$ (remainder = 3)

   $18 \div 6 = 3$

   Thus, factors of 18 are 1, 2, 3, 6, 9 and 18.

   (c) $36 \div 1 = 36$, $36 \div 2 = 18$, $36 \div 3 = 12$, $36 \div 4 = 9$,

   $36 \div 5 = 7$ (remainder = 1) $36 \div 6 = 6$,

   $36 \div 7 = 5$ (remainder = 1) $36 \div 8 = 4$ (remainder = 4)

   $36 \div 9 = 4$

   Thus, factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18 and 36.

Exercise-3

1. (a) The possible combinations of 15 are
   $15 = 1 \times 15,$ $15 = 3 \times 5,$ $15 = 5 \times 3,$ $15 = 15 \times 1$
   Thus, factors of 15 are 1, 3, 5 and 15.

   (b) $20 = 1 \times 20,$ $20 = 2 \times 10,$ $20 = 4 \times 5,$ $20 = 5 \times 4,$
   $20 = 10 \times 2,$ $20 = 20 \times 1$
   Thus, factors of 20 are 1, 2, 4, 5, 10 and 20.

   (c) $24 = 1 \times 24,$ $24 = 2 \times 12,$ $24 = 3 \times 8,$ $24 = 4 \times 6,$
   $24 = 6 \times 4,$ $24 = 8 \times 3,$ $24 = 12 \times 2,$ $24 = 24 \times 1$
   Thus, factors of 24 are 1, 2, 3, 4, 6, 8, 12 and 24.

   (d) $28 = 1 \times 28,$ $28 = 2 \times 14,$ $28 = 4 \times 7,$ $28 = 7 \times 4,$
   $28 = 14 \times 2,$ $28 = 28 \times 1$
   Thus, factors of 28 are 1, 2, 4, 7, 14 and 28.

   (e) $32 = 1 \times 32,$ $32 = 2 \times 16,$ $32 = 4 \times 8,$ $32 = 8 \times 4,$
   $32 = 16 \times 2,$ $32 = 32 \times 1$
   Thus, factors of 32 are 1, 2, 4, 8, 16 and 32.

   (f) $45 = 1 \times 45,$ $45 = 3 \times 15,$ $45 = 5 \times 9,$ $45 = 9 \times 5,$
   $45 = 15 \times 3,$ $45 = 45 \times 1$
   Thus, factors of 45 are 1, 3, 5, 9, 15 and 45.

2. (a) $12 \div 1 = 12,$ $12 \div 2 = 6,$ $12 \div 3 = 4,$ $12 \div 4 = 3$
   We do not divide further as 3 is also a factor of 12.
   Thus, factors of 12 are 1, 2, 3, 4, 6 and 12.

   (b) $18 \div 1 = 18,$ $18 \div 2 = 9,$ $18 \div 3 = 6,$
   $18 \div 4 = 4$ (remainder = 2) $18 \div 5 = 3$ (remainder = 3)
   $18 \div 6 = 3$
   Thus, factors of 18 are 1, 2, 3, 6, 9 and 18.

   (c) $36 \div 1 = 36,$ $36 \div 2 = 18,$ $36 \div 3 = 12,$ $36 \div 4 = 9,$
   $36 \div 5 = 7$ (remainder = 1) $36 \div 6 = 6,$
   $36 \div 7 = 5$ (remainder = 1) $36 \div 8 = 4$ (remainder = 4)
   $36 \div 9 = 4$
   Thus, factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18 and 36.

(d) $54 \div 1 = 54$, $54 \div 2 = 27$, $54 \div 3 = 18$,

$54 \div 4 = 13$ (remainder = 2) $54 \div 5 = 10$ (remainder = 4)

$54 \div 6 = 9$, $54 \div 7 = 7$ (remainder = 5)

$54 \div 8 = 6$ (remainder = 6) $54 \div 9 = 6$

Thus, factors of 54 are 1, 2, 3, 6, 9, 18, 27 and 54.

(e) $63 \div 1 = 63$, $63 \div 2 = 31$ (remainder = 1)

$63 \div 3 = 21$, $63 \div 4 = 15$ (remainder = 3)

$63 \div 5 = 12$ (remainder = 3) $63 \div 6 = 10$ (remainder = 3)

$63 \div 7 = 9$, $63 \div 8 = 7$ (remainder = 7)

$63 \div 9 = 7$

Thus, factors of 63 are 1, 3, 7, 9, 21 and 63.

(f) $81 \div 1 = 81$, $81 \div 2 = 40$ (remainder = 1)

$81 \div 3 = 27$, $81 \div 4 = 20$ (remainder = 1)

$81 \div 5 = 16$ (remainder = 1) $81 \div 6 = 13$ (remainder = 3)

$81 \div 7 = 11$ (remainder = 4) $81 \div 8 = 10$ (remainder = 1)

$81 \div 9 = 9$

Thus, factors of 81 are 1, 3, 9, 27 and 81.

3. (a) True, 48 is exactly divisible by 4 leaving no remainder.

(b) False, 0 is not a factor of any number, because division by 0 is not possible.

(c) True, Any number go into itself once.

(d) False, 65 is not exactly divisible by 8.

(e) True, 1 divides every number i.e. 1 is a divisor of every number.

(f) False, 5 is a factor of 45.

Exercise-4

1. (a) Factors of 4 are ①, ②, 4.

Factors of 10 are ①, ②, 5, 10.

Common factors are 1 and 2.

(b) Factors of 9 are ①, ③, ⑨.

Factors of 27 are ①, ③, ⑨, 27.

Common factors are 1, 3 and 9.

(c) Factors of 12 are ①,②,3 ,④, 6, 12.

Factors of 20 are ①,②,④, 5, 10, 20.

Common factors are 1, 2 and 4.

(d) Factors of 24 are ①, 2,③, 4, 6, 8, 12, 24.

Factors of 33 are ①,③, 11, 33.

Common factors are 1 and 3.

(e) Factors of 45 are ①,③,⑤, 9,⑮, 45.

Factors of 60 are ①, 2,③, 4,⑤, 6, 10, 12,⑮ , 20, 30, 60.

Common factors are 1, 3, 5 and 15.

(f) Factors of 12 are ①,②,③, 4, ⑥, 12.

Factors of 18 are ①,②,③,⑥, 9, 18.

Factors of 36 are ①,②,③, 4 ,⑥, 9, 12, 18, 36.

Common factors are 1, 2, 3 and 6.

2. (a) Factors of 4 are ①,②, 4.

Factors of 6 are ①,②, 3, 6.

Common factors are 1 and 2.

∴   HCF = 2.

(b) Factors of 9 are ①,③, 9.

Factors of 15 are ①,③, 5, 15.

Common factors are 1 and 3.

∴   HCF = 3.

(c) Factors of 30 are ①,②, 3,⑤, 6, ⑩, 15, 30.

Factors of 40 are ①,②, 4,⑤, 8, ⑩, 20, 40.

Common factors are 1, 2, 5 and 10.

∴   HCF = 10.

(d) Factors of 16 are ①,②,④, 8, 16.

Factors of 20 are ①,②,④, 5, 10, 20.

Common factors are 1, 2 and 4.

∴   HCF = 4.

(e) Factors of 6 are ①,②,③,⑥.

Factors of 12 are ①,②,③,4,⑥, 12.

Factors of 24 are ①,②,③, 4 ,⑥, 8 , 12 , 24.

Common factors are 1, 2, 3 and 6.

∴ HCF = 6.

(f) Factors of 25 are ①,⑤, 25.

Factors of 45 are ①, 3,⑤, 9, 15, 45.

Factors of 50 are ①, 2 ,⑤, 10, 25, 50.

Common factors are 1 and 5.

∴ HCF = 5.

3. (a) Factors of 9 are ①,③, 9.

Factors of 12 are ①, 2,③, 4 ,6, 12.

Common factors are 1 and 3.

∴ HCF = 3.

So, 9 and 12 are not co-prime numbers.

(b) Factors of 3 are ①, 3.

Factors of 8 are ①, 2 , 4 , 8.

Common factor is 1.

∴ HCF = 1

So, 3 and 8 are co-prime numbers.

(c) 3 is a factor of 15.

So, HCF of 3 and 15 = 3

So, 3 and 15 are not co-prime numbers.

4. (a)

96
② × 48
② × ② × 24
② × ② × ② × 12
② × ② × ② × ② × ⑥
② × ② × ② × ② × ② × ③

$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

(b)

84
② × 42
② × ② × 21
② × ② × ③ × ⑦

$84 = 2 \times 2 \times 3 \times 7$

Mathematics-4 (Term-1)

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(c)

$$72 = 2 \times 2 \times 2 \times 3 \times 3$$
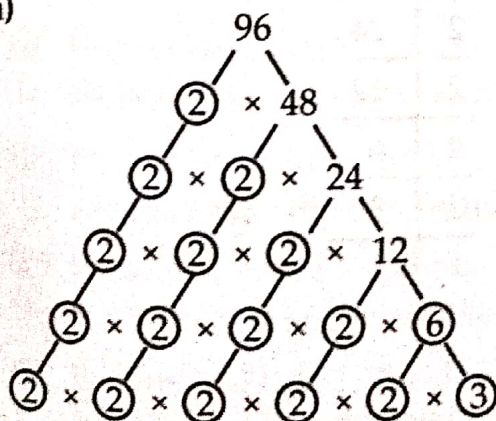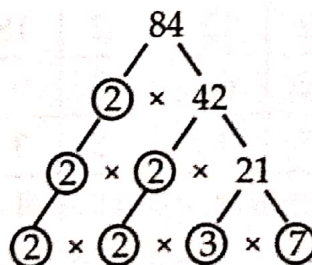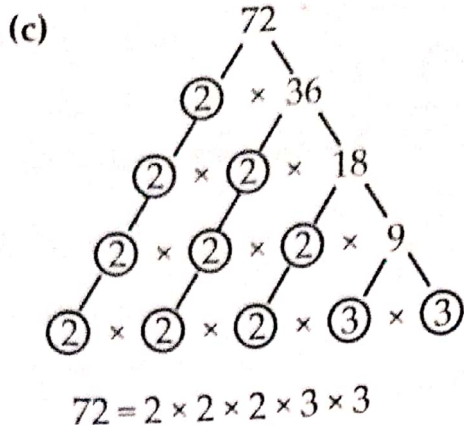
5. (a)

2	14
7	7
	1

2	16
2	8
2	4
2	2
	1

$14 = ②\times 7$

$16 = ②\times 2 \times 2 \times 2$

$HCF = 2$

(b)

3	15
5	5
	1

2	18
3	9
3	3
	1

$15 = ③\times 5$

$18 = 2 \times ③\times 3$

$HCF = 3$

(c)

2	40
2	20
2	10
5	5
	1

2	50
5	25
5	5
	1

$40 = ②\times 2 \times 2 \times ⑤$

$50 = ②\times ⑤\times 5$

$HCF = 2 \times 5 = 10$

(d)

2	28
2	14
7	7
	1

2	36
2	18
3	9
3	3
	1

$28 = ②\times ②\times 7$

$36 = ②\times ②\times 3 \times 3$

$HCF = 2 \times 2 = 4$

(e)

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

2	24
2	12
2	6
3	3
	1

$12 = ②\times 2 \times ③$

$18 = ②\times 3 \times ③$

$24 = ②\times 2 \times 2 \times ③$

$HCF = 2 \times 3 = 6$

(f)

5	25
5	5
	1

5	35
7	7
	1

3	45
3	15
5	5
	1

$25 = ⑤ \times 5$

$35 = ⑤ \times 7$

$45 = 3 \times 3 \times ⑤$　　　　　　HCF = 5

Exercise-5

1. (a) Factors of 5 are 1 and 5.
   As there are only two factors, 1 and the number itself.
   Hence, 5 is a prime number.

   (b) Factors of 12 are 1, 2, 3, 4, 6 and 12.
   As there are more than two factors, so, 12 is a composite number.

   (c) Factors of 15 are 1, 3, 5 and 15.
   As there are more than two factors, so, 15 is a composite number.

   (d) Factors of 27 are 1, 3, 9 and 27.
   As there are more than two factors, so, 27 is a composite number.

   (e) Factors of 31 are 1 and 31.
   As there are only two factors, so, 31 is a prime number.

   (f) Factors of 39 are 1, 3, 13, 39.
   As there are more than two factors, so, 39 is a composite number.

   (g) Factors of 52 are 1, 2, 4, 13, 26, 52.
   As there are more than two factors, so, 52 is a composite number.

   (h) Factors of 60 are 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60.
   ∴ 60 is a composite number.

   (i) Factors of 67 are 1 and 67.
   As there are only two factors, so, 67 is a prime number.

   (j) Factors of 89 are 1 and 89.
   As there are only two factors, so, 89 is a prime number.

   (k) Factors of 95 are 1, 5, 19 and 95.
   ∴ 95 is a composite number.

   (l) Factors of 99 are 1, 3, 9, 11, 33, 99.
   ∴ 99 is a composite number.

2. Prime numbers between 75 and 100 are 79, 83, 89 and 97.

Mathematics-4 (Term-1)

Mental Maths Corner

1. (a) (iv)　　(b) (iv)　　(c) (iii)　　(d) (iv)　　(e) (iii)　　(f) (i)

2. (a) 2　　(b) 97　　(c) twin prime numbers

   (d) composite　　　　　　(e) 25

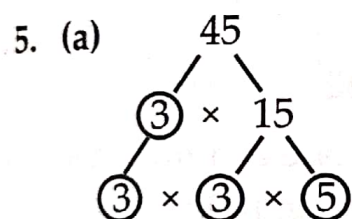3. (a) True　(b) False　(c) True　(d) False

Review Exercise

1. (a) Multiples of 3 are 3, 6, 9, 12, ⑮, 18, 21, 24, 27, ㉚.

   Multiples of 5 are 5, 10, ⑮, 20, 25, ㉚, 35, 40, 45, 50.

   Common multiples are 15 and 30.

   ∴ LCM = 15

   ∴ The first six common multiples of 3 and 5 are

   15 × 1, 15 × 2, 15 × 3, 15 × 4, 15 × 5, 15 × 6 i.e. 15, 30, 45, 60, 75, 90.

   (b) Multiples of 9 are 9, 18, 27, 36, ㊺, 54, 63, 72, 81, ⑨⓪.

   Multiples of 15 are 15, 30, ㊺, 60, 75, ⑨⓪, 105, 120, 135, 150.

   Common multiples are 45 and 90.

   ∴ LCM = 45

   ∴ The first six common multiples of 9 and 15 are

   45 × 1, 45 × 2, 45 × 3, 45 × 4, 45 × 5, 45 × 6 i.e. 45, 90, 135, 180, 225, 270.

   (c) Multiples of 12 are 12, 24, 36, 48, ⓺⓪, 72, 84, 96, 108, ⑫⓪.

   Multiples of 20 are 20, 40, ⓺⓪, 80, 100, ⑫⓪, 140, 160, 180, 200.

   Common multiples are 60 and 120.

   ∴ LCM = 60

   ∴ The first six common multiples of 12 and 20 are

   60 × 1, 60 × 2, 60 × 3, 60 × 4, 60 × 5, 60 × 6 i.e. 60, 120, 180, 240, 300, 360.

2. (a) $18 = 2 \times 3 \times 3$　　　　(b) $56 = 2 \times 2 \times 2 \times 7$

   $24 = 2 \times 2 \times 2 \times 3$　　　　$80 = 2 \times 2 \times 2 \times 2 \times 5$

   $30 = 2 \times 3 \times 5$

   $LCM = 2 \times 2 \times 2 \times 3 \times 3 \times 5 = 360$　　$LCM = 2 \times 2 \times 2 \times 2 \times 5 \times 7 = 560$

3. (a) $48 = 1 \times 48$, $48 = 2 \times 24$, $48 = 3 \times 16$, $48 = 4 \times 12$, $48 = 6 \times 8$,

   $48 = 8 \times 6$, $48 = 12 \times 4$, $48 = 16 \times 3$, $48 = 24 \times 2$, $48 = 48 \times 1$.

   Factors of 48 are 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48.

(b) $75 = 1 \times 75,$ $75 = 3 \times 25,$ $75 = 5 \times 15,$

$75 = 15 \times 5,$ $75 = 25 \times 3,$ $75 = 75 \times 1.$
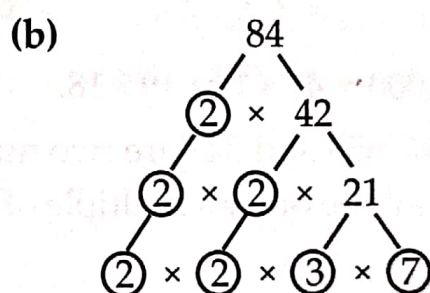
Factors of 75 are 1, 3, 5, 15, 25 and 75.

4. (a) Factors of 24 are   ①, ②, ③, 4, ⑥, 8, 12, 24.

Factors of 30 are   ①, ②, ③, 5, ⑥, 10, 15, 30.

Common factors are 1, 2, 3 and 6.

HCF = 6

(b) Factors of 42 are   ①, ②, ③, ⑥, 7, 14, 21, 42.

Factors of 60 are   ①, ②, ③, 4, 5, ⑥, 10, 12, 15, 20, 30, 60.

Common factors are 1, 2, 3 and 6.

HCF = 6

(c) Factors of 15 are   ①, ③, ⑤, ⑮.

Factors of 45 are   ①, ③, ⑤, 9, ⑮, 45.

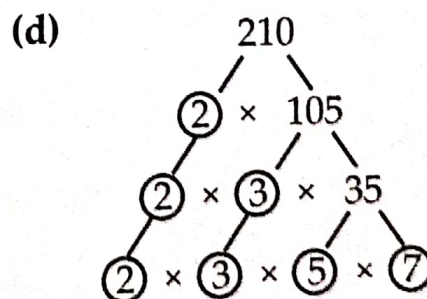Common factors are 1, 3, 5 and 15.

HCF = 15

5. (a)

$45 = 3 \times 3 \times 5$

(b)

$84 = 2 \times 2 \times 3 \times 7$

(c)

$100 = 2 \times 2 \times 5 \times 5$

(d)

$210 = 2 \times 3 \times 5 \times 7$

6. (a)

2	20
2	10
5	5
	1

5	35
7	7
	1

3	45
3	15
5	5
	1

$20 = 2 \times 2 \times ⑤$

$35 = ⑤ \times 7$

$45 = 3 \times 3 \times ⑤$

$HCF = 5$

(b)

2	22
11	11
	1

3	33
11	11
	1

7	77
11	11
	1

$22 = 2 \times ⑪$

$33 = 3 \times ⑪$

$77 = 7 \times ⑪$

$HCF = 11$

HOTS

$1000 = 47 \times 14 + 19 \times 18,$ $\qquad$ $1000 = 658 + 342$

So, 658 and 342 are two numbers such that one is a multiple of 47 and the other a multiple of 19 and whose sum is 1000.