

Exe- 8-A

Q6 @ Write the multiples of 3 that are greater than 20 but less than 35.

Ans - 21, 24, 27, 30, 33

(b) Write the multiples of 5 that are greater than 25 but less than 50.

Ans - 30, 35, 40, 45

(c) Write all the multiples of 8 that are less than 55.

Ans - 8, 16, 24, 32, 40, 48

(d) Write all the multiples of 12 that are two-digit numbers.

Ans - 12, 24, 36, 48, 60, 72, 84, 96

Q7- Write the first two common multiples of -

(a) 4 and 5

Ans - 20, 40

(b) 6 and 8

Ans - 24, 48

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Q7 - 5, 10 and 15
 Sol - 30, 60, 90

Q8 - Write the first three common multiples of .

(a) 2 and 3
 Ans - 6, 12, 18

(b) 3 and 4
 Ans - 12, 24, 36

(c) 10 and 20
 Ans - 20, 40

Q10 - (a) Write the even numbers between

(i) 47 and 59
 Ans - 48, 50, 52, 54, 56, 58

(ii) 215 and 230
 Ans - 216, 218, 220, 222, 224, 226, 228

(b) Write the odd numbers between

(i) 50 and 72
 Ans - 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71

(ii) 96 and 117
 Ans - 97, 99, 101, 103, 105, 107, 109, 111, 113, 115

Exc- 00. ①

Q1 Fill in the blanks —

- 6 (a) Ans - factors
(b) Ans - factors
(c) Ans - factors
(d) Ans - factors
(e) Ans - divisible

Q2. In each of the following, is the first number a factor of the second number?

(a) (4) 76

Sol-
$$\begin{array}{r} 19 \\ 4 \overline{) 76} \\ \underline{4} \\ 36 \\ \underline{36} \\ 0 \end{array}$$

Ans: — Yes, 4 is a factor of 76.

(b) (9) 147

Sol-
$$\begin{array}{r} 016 \\ 9 \overline{) 147} \\ \underline{09} \\ 57 \\ \underline{54} \\ 03 \end{array}$$

Ans: — No, 9 is not a factor of 147.

(2)

Q2C) (12) 136

$$\begin{array}{r} \text{Sol} - \quad 011 \\ 12 \overline{) 136} \\ \underline{12} \\ 16 \\ \underline{12} \\ 4 \end{array}$$

Ans -
No, 12 is not a factor
of 136

(e) (18) 918

$$\begin{array}{r} \text{Sol} - \quad 051 \\ 18 \overline{) 918} \\ \underline{90} \\ 18 \\ \underline{18} \\ 0 \end{array}$$

Ans: Yes, 18 is a
factor of 918.

Q3. In which of the
following, is the second
number a factor of the
first number?

(a) 78 (13)

Sol -

$$\begin{array}{r} 06 \\ 13 \overline{) 78} \\ \underline{78} \\ 0 \end{array}$$

Ans: Yes, 13 is a factor

(d) (15) 465

sol -

$$\begin{array}{r} 031 \\ 15 \overline{) 465} \\ \underline{45} \\ 15 \\ \underline{15} \\ 0 \end{array}$$

Ans -

Yes, 15 is a factor
of 465

Q3(b) 264, (24)

Sol -

$$\begin{array}{r} 011 \\ 24 \overline{) 264} \\ \underline{24} \\ 24 \\ \underline{24} \\ 0 \end{array}$$

Ans: Yes, 24 is a factor
of 264

(c) 1350, (18)

sol -

$$\begin{array}{r} 0075 \\ 18 \overline{) 1350} \\ \underline{126} \\ 90 \\ \underline{90} \\ 0 \end{array}$$

Ans: Yes, 18 is a
factor of 1350

Q3 (a) 1848, (56)

Sol -

$$\begin{array}{r} 0033 \\ 56 \overline{) 1848} \\ \underline{168} \\ 168 \\ \underline{168} \\ 0 \end{array}$$

Ans - Yes, 56 is a factor of 1848

(c) 9,555, (91) (3)

Sol -

$$\begin{array}{r} 0105 \\ 91 \overline{) 9555} \\ \underline{91} \\ 455 \\ \underline{455} \\ 0 \end{array}$$

Ans - Yes, 91 is a factor of 9555

Q4 - Write two factors of the following numbers, other than one and the number itself.

(a) 75

Ans - 3, 5

(b) 84

Ans - 2, 4

(c) 91

Ans - 7, 13

(d) 112

Ans - 2, 4

(e) 126

Ans - 2, 3

Q5 - Write three factors of the following numbers, other than 1 and itself.

(a) 30

Ans - 2, 3, 5

(b) 715

Ans - 5, 11, 13

(c) 36

Ans - 2, 3, 4

(d) 1430

Ans - 2, 5, 10

(e) 105

Ans - 3, 5, 7

Q6:- ④ Which of the following numbers are factors of 180?

Ans:- 1, 2, 3, 4, 6, 10, 12, 15, 180

⑤ Which of the following numbers are factors of 375?

Ans:- 1, 3, 5, 15, 25, 75, 375

Q7- Write all the factors of the following numbers.

④ 10

Sol:- 1×10
 2×5

Ans:- 1, 2, 5, 10

(C) 32

Sol:- 1×32
 2×16
 4×8

Ans = 1, 2, 4, 8, 16, 32

(C) 231

Sol:- 1×231
 3×77
 7×33
 11×21

Ans:- 1, 3, 7, 11, 21, 33, 77, 231

⑤ 20

Sol:- 1×20
 2×10
 4×5

Ans- 1, 2, 4, 5, 10, 20

(d) 54

Sol:-

1×54
 2×27
 3×18
 6×9

Ans = 1, 2, 3, 6, 9, 18, 27, 54

Exe- 8-C

①

Q1 - In each of the following pairs, is the first number divisible by the second number?

(a) 45, 9

$$\begin{array}{r} \text{sol} \rightarrow \begin{array}{r} 05 \\ 9 \overline{)45} \\ \underline{45} \\ 0 \end{array} \end{array}$$

Ans! - Yes, 45 is divisible by 9.

(c) 132, 11

$$\begin{array}{r} \text{sol} \rightarrow \begin{array}{r} 12 \\ 11 \overline{)132} \\ \underline{11} \\ 22 \\ \underline{22} \\ 0 \end{array} \end{array}$$

Ans! - Yes, 132 is divisible by 11

(e) 18225, 27

$$\begin{array}{r} \text{sol} \rightarrow \begin{array}{r} 00675 \\ 27 \overline{)18225} \\ \underline{162} \\ 202 \\ \underline{189} \\ 135 \\ \underline{135} \\ 0 \end{array} \end{array}$$

Ans! - Yes, 18225 is divisible by 27.

(b) 96, 8

$$\begin{array}{r} \text{sol} \rightarrow \begin{array}{r} 12 \\ 8 \overline{)96} \\ \underline{8} \\ 16 \\ \underline{16} \\ 0 \end{array} \end{array}$$

Ans! - Yes, 96 is divisible by 8.

(d) 1159, 13

$$\begin{array}{r} \text{sol} \rightarrow \begin{array}{r} 0089 \\ 13 \overline{)1159} \\ \underline{104} \\ 0119 \\ \underline{117} \\ 2 \end{array} \end{array}$$

Ans! - No, 1159 is not divisible by 13

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Q2 - Which of these are divisible by 10?

Ans -

Rule: - Numbers that end in 0 are divisible by 10

(a) Ans - 790, 3000

(b) Ans - 900

Q3 - Which of these are divisible by 5?

Ans -

Rule: - Numbers that end in 0 or 5 are divisible by 5.

(a) Ans - 80, 65

(b) Ans - 95, 110, 7005

Q4 - Which of these are divisible by 2?

Ans -

Rule: - A number is divisible by 2 if it is even.

(a) Ans - 6, 300, 13598

(b) Ans - 34, 70, 6050

Q5 - Which of these are divisible by 3?

Ans - Rule: - A number is divisible by 3 if the sum of its digits is divisible by 3.

(a) Ans - 18, 81, 7380

(b) Ans - 555, 777, 888

Q6- Fill in the smallest digit that makes the number divisible by the one in the square

(a) $\boxed{2}$ 60

(b) $\boxed{3}$ 12

(c) $\boxed{5}$ 40

(d) $\boxed{10}$ 170

(e) $\boxed{2}$ 108

(f) $\boxed{3}$ 270

(g) $\boxed{5}$ 3400

(h) $\boxed{10}$ 3450

(i) $\boxed{2}$ 5530

(j) $\boxed{3}$ 522

(k) $\boxed{5}$ 18265

(l) $\boxed{10}$ 900

Q7- To be divisible by the second number what smallest number should be added to the first?

(a) 243 (2) Ans: - 1

(b) 37 (10) Ans: - 3

(c) 2981 (5) Ans: - 4

(d) 401 (3) Ans: - 1

(e) 7,291 (3) Ans: - 2

Q8- What smallest number should be subtracted from the first number to make it divisible by the second?

(a) 75 (2) Ans: - 1

(b) 989 (10) Ans: - 9

(c) 2012 (5) Ans: - 2

(d) 3652 (3) Ans: - 1

(e) 1637 (3) Ans: - 2

Q9 @ Find the biggest 4-digit number divisible by 5. Also find the smallest 5 digit multiple of 10.

Ans - 9995 , 10,000

(b) Find the smallest 3-digit multiple of 5. Also find the greatest 5 digit number divisible by 3.

Ans - 10 , 99999

Q10 @ Ans - 9990

(b) Ans - 102

Q11 @ Ans - 680, 690, 700

(b) Ans - 110

(c) Ans - 204, 210, 216

Q12 - Test 96, 3261, 4733 and 70230 for divisibility by 2, 3, 5 and 10

Sol -

Number	96	3261	4733	70230
Divisible by	2, 3	3	None	2, 3, 5, 10

Q13 - To make divisible by 5, find the smallest number to be added to (a) 1706 (b) 932

(a) sol - Numbers that end in 0 or 5, are divisible by 10
so, 4 should be added.

(b) To make it divisible by 5, we should add 3
so, 3 should be added.

Q14 - (a) Ans - 2.

(b) Ans - 1

Q15 (a) Smallest 5 digit number divisible by 3
sol -

Smallest 5 digit number = 10000
Divisor = 3

$$\begin{array}{r} 03333 \\ 3 \overline{) 10000} \\ \underline{9} \\ 10 \\ \underline{09} \\ 10 \\ \underline{9} \\ 10 \\ \underline{09} \\ 1 \end{array}$$

$$3 - 1 = 2$$

$$\begin{aligned} \text{Ans} &= 10,000 + 2 \\ &= 10,002 \end{aligned}$$

⑥

Q15 (b) The greatest 4 digit multiple of 2
 Sol - Greatest 4 digit number = 9999
 Divisor = 2

$$\begin{array}{r}
 499 \\
 2 \overline{) 9999} \\
 \underline{8} \\
 19 \\
 \underline{18} \\
 19 \\
 \underline{18} \\
 19 \\
 \underline{18} \\
 1
 \end{array}$$

$$\text{Ans} = 9999 - 1 = 9998$$

(c) Smallest 3 digit number divisible by 3 as well as 5.

Sol - Smallest 3 digit number = 100
 Divisor = 3

$$\begin{array}{r}
 033 \\
 3 \overline{) 100} \\
 \underline{09} \\
 10 \\
 \underline{09} \\
 1
 \end{array}$$

$$3 - 1 = 2$$

$$\text{Ans} = 100 + 2 = 102$$

But we can not divide 102 by 5
 so, to make it divisible by 5, we
 should add 3.

$$\text{Ans} = \underline{\underline{105}}$$

"It is my absolute belief that Indians have unlimited talent. I have no doubt about our capabilities." - Narendra Modi

⑦

Q16 -

(a) 519 and 530, divisible by both 2 and 3.

Ans - 522, 528

(b) 825 and 845, divisible by both 2 and 5

Ans - 830, 840

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Q3-@ Write all the prime numbers below 30. How many are they?

Ans - 2, 3, 5, 7, 11, 13, 17, 19, 23, 29
They are 10.

⑤ Write all the prime numbers between 40 and 60.

Ans - 41, 43, 47, 53, 59

⑥ Write two prime numbers whose difference is 1.

Ans - 2 and 3

⑦ Is there a prime number which is even? If so, which number is it?

Ans - Yes, it is 2.

Q 4-@ Write all the composite numbers below 20. How many are they?

Ans - 4, 6, 8, 9, 10, 12, 14, 15, 16, 18

They are 10

⑧ Write all the composite numbers between 15 and 25.

Ans - 16, 18, 20, 21, 22, 24

Q4) Write the two smallest composite numbers whose difference is 4. ②

Ans - 4, 8

Q6 Write the prime factors by breaking down into smaller factors.

(a) 40

$$\begin{array}{r} \text{sol - } 2 \overline{)40} \\ \underline{2 20} \\ 2 \overline{)10} \\ \underline{2 5} \\ 5 \overline{)5} \\ \underline{5 1} \\ 1 \end{array}$$

Ans = 2, 2, 2, 5

(c) 96

$$\begin{array}{r} \text{sol - } 2 \overline{)96} \\ \underline{2 48} \\ 2 \overline{)24} \\ \underline{2 12} \\ 2 \overline{)6} \\ \underline{2 3} \\ 3 \overline{)3} \\ \underline{3 1} \\ 1 \end{array}$$

Ans = 2, 2, 2, 2, 2, 3

(c) 840

$$\begin{array}{r} \text{sol - } 2 \overline{)840} \\ \underline{2 420} \\ 2 \overline{)210} \\ \underline{2 105} \\ 3 \overline{)105} \\ \underline{3 35} \\ 5 \overline{)35} \\ \underline{5 7} \\ 7 \overline{)7} \\ \underline{7 1} \\ 1 \end{array}$$

Ans = 2, 2, 2, 3, 5, 7

(b) 63

$$\begin{array}{r} \text{sol - } 3 \overline{)63} \\ \underline{3 21} \\ 7 \overline{)21} \\ \underline{7 7} \\ 7 \overline{)7} \\ \underline{7 1} \\ 1 \end{array}$$

Ans = 3, 3, 7

(d) 105

$$\begin{array}{r} \text{sol - } 3 \overline{)105} \\ \underline{3 35} \\ 5 \overline{)35} \\ \underline{5 7} \\ 7 \overline{)7} \\ \underline{7 1} \\ 1 \end{array}$$

Ans = 3, 5, 7

(d) 2520

$$\begin{array}{r} \text{sol - } 2 \overline{)2520} \\ \underline{2 1260} \\ 2 \overline{)630} \\ \underline{2 315} \\ 3 \overline{)315} \\ \underline{3 105} \\ 3 \overline{)105} \\ \underline{3 35} \\ 5 \overline{)35} \\ \underline{5 7} \\ 7 \overline{)7} \\ \underline{7 1} \\ 1 \end{array}$$

Ans = 2, 2, 2, 3, 3, 5, 7

③

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Q7- Write the prime factorization of the following numbers by repeated division.

① 24

sol -

$$\begin{array}{r} 2 \overline{) 24} \\ 2 \overline{) 12} \\ 2 \overline{) 6} \\ 3 \overline{) 3} \\ 1 \end{array}$$

Ans:- $24 = 2 \times 2 \times 2 \times 3$

② 120

sol -

$$\begin{array}{r} 2 \overline{) 120} \\ 2 \overline{) 60} \\ 2 \overline{) 30} \\ 3 \overline{) 15} \\ 5 \overline{) 5} \\ 1 \end{array}$$

Ans:-

$120 = 2 \times 2 \times 2 \times 3 \times 5$

③ 1050

sol -

$$\begin{array}{r} 2 \overline{) 1050} \\ 3 \overline{) 525} \\ 5 \overline{) 175} \\ 5 \overline{) 35} \\ 7 \overline{) 7} \\ 1 \end{array}$$

Ans:- $1050 = 2 \times 3 \times 5 \times 5 \times 7$

④

69

sol -

$$\begin{array}{r} 3 \overline{) 69} \\ 23 \overline{) 23} \\ 1 \end{array}$$

Ans:- $69 = 3 \times 23$

⑤ 512

sol -

$$\begin{array}{r} 2 \overline{) 512} \\ 2 \overline{) 256} \\ 2 \overline{) 128} \\ 2 \overline{) 64} \\ 2 \overline{) 32} \\ 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

Ans:-

$512 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

⑥ 1225

sol -

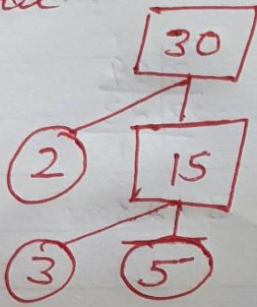
$$\begin{array}{r} 5 \overline{) 1225} \\ 5 \overline{) 245} \\ 7 \overline{) 49} \\ 7 \overline{) 7} \\ 1 \end{array}$$

Ans:- $1225 = 5 \times 5 \times 7 \times 7$

Q8 Find the prime factorization by drawing factor tree.

(a) 30

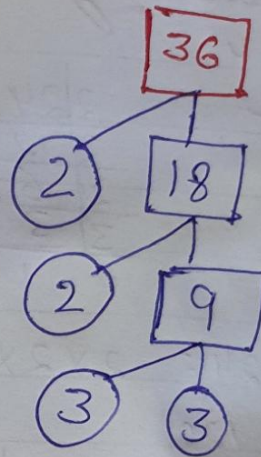
sol -



(b)

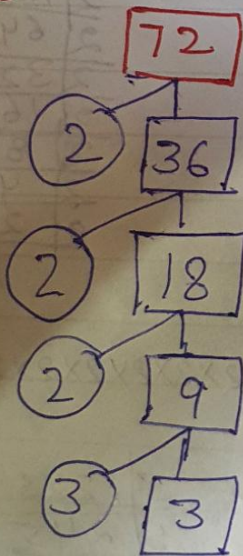
36

sol -



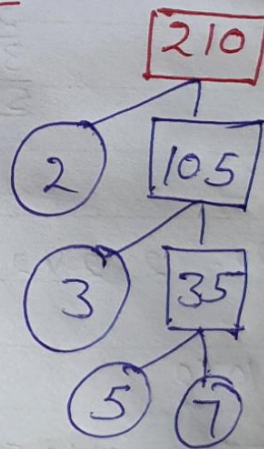
(c) 72

sol -



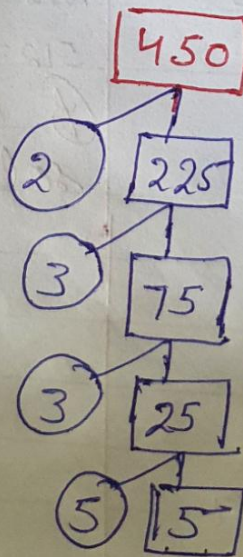
(d) 210

sol -



(e) 450

sol -



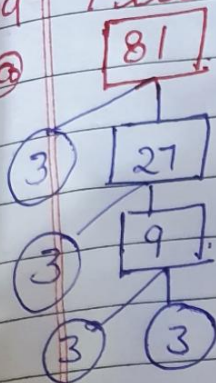
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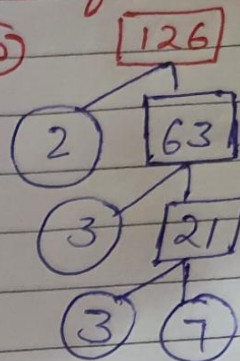
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Q9 Fill in to show prime factorization

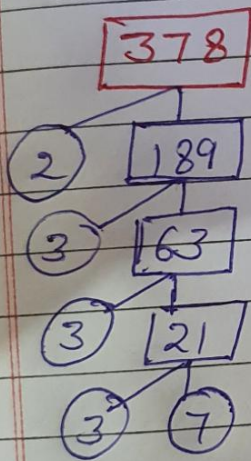
a



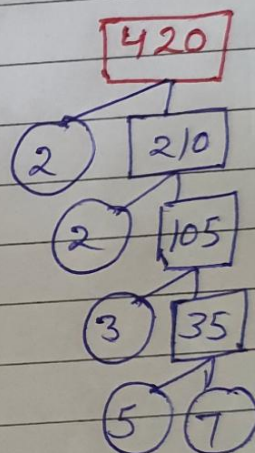
b



c



d



1. Fill in the blanks.

- (a) $5 \times 6 = 30$. So 30 is a multiple of 5 and 6.
 (b) $7 \times 11 = 77$. So 77 is a multiple of 7 and 11.
 (c) $9 \times 100 = 900$. So 900 is a multiple of 9 and 100.
 (d) $3 \times 5 \times 13 = 195$. So 195 is a multiple of 3, 5 and 13.

2. Write the first three multiples of:

(a) 2 2, 4, 6

(b) 3 3, 6, 9

(c) 5 5, 10, 15

3. Write the first four multiples of:

(a) 4 4, 8, 12, 16

(b) 9 9, 18, 27, 36

(c) 15 15, 30, 45, 60

4. Tick the multiples of the number in the circle.

(a) 5 10 25 40 55 60

(b) 6 18 28 32 42 94

(c) 10 25 40 70 200 105

5. True (T) or false (F)?

(a) 56 is a multiple of 8. T

(b) The ninth multiple of 3 is 9. F

(c) The sixth multiple of 5 is 30. T

(d) 70 and 7000 are multiples of 100. F

6. (a) Write the multiples of 3 that are greater than 20 but less than 35.

(b) Write the multiples of 5 that are greater than 25 but less than 50.

(c) Write all the multiples of 8 that are less than 55.

(d) Write all the multiples of 12 that are two-digit numbers.

7. Write the first two common multiples of: (a) 4 and 5

(b) 6 and 8

(c) 5, 10 and 15

8. Write the first three common multiples of: (a) 2 and 3

(b) 3 and 4

(c) 10 and 20

9. Circle the even numbers and tick the odd numbers.

(a) 12 15 21 24

(b) 87 106 270 1374

(c) 643 1058 4689 15576

10. (a) Write the even numbers between: (i) 47 and 59

(b) Write the odd numbers between: (i) 50 and 72

(ii) 215 and 230

(ii) 96 and 117

1. (a) Write the least odd number of three digits and the greatest even number of two digits. 101, 98

(b) Write the greatest odd number and the least even number of three digits. 999, 100

2. (a) Write the first six 2-digit even numbers.

(b) Write the last five odd numbers that are less than 502.

(c) Write the first four odd numbers that are greater than 997.

(d) Is there a counting number which is neither even nor odd? No



Exercise 8B

1. Fill in the blanks.

- (a) $5 \times 6 = 30$, so 5 and 6 are factors of 30.
 (b) $48 = 8 \times 6$, so 6 and 8 are factors of 48.
 (c) $12 = 2 \times 2 \times 3$, so 2, 3, 4 and 6 are factors of 12.
 (d) $45 = 3 \times 3 \times 5$, so 3, 5, 9 and 15 are factors of 45.
 (e) 16 and 9 are factors of 144. So 144 is divisible by 16 and 9.

2. In each of the following, is the first number a factor of the second number?

- (a) 4 76 (b) 9 147 (c) 12 136 (d) 15 465 (e) 18 918

3. In each of the following, is the second number a factor of the first number?

- (a) 78 13 (b) 264 24 (c) 1,350 18 (d) 1,848 56 (e) 9,555 9

4. Write two factors of the following numbers, other than 1 and the number itself.

- (a) 75 3, 5 (b) 84 2, 4 (c) 91 13, 7 (d) 112 2, 4 (e) 126 2, 3

5. Write three factors of the following numbers, other than 1 and the number itself.

- (a) 30 2, 3, 5 (b) 36 2, 3, 4 (c) 105 3, 5, 7 (d) 715 5, 11, 13 (e) 1,430 2, 5, 11

6. (a) Which of the following numbers are factors of 180?

1, 2, 3, 4, 6, 8, 10, 12, 15, 24, 35, 180

(b) Which of the following numbers are factors of 375?

1, 3, 4, 5, 8, 9, 13, 15, 25, 37, 75, 375

7. Write all the factors of the following numbers.

(a) 10
1, 2, 5, 10

(b) 20
1, 2, 4, 5, 10, 20

(c) 32
1, 2, 4, 8, 16, 32

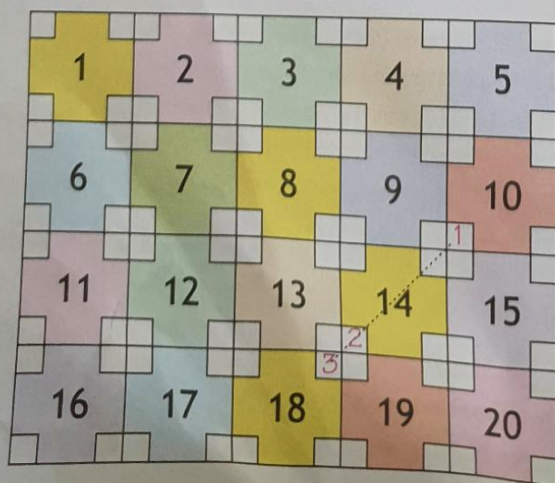
(d) 54

1, 2, 3, 6, 9, 18, 27, 54

(e) 231

1, 3, 7, 11, 21, 33, 77, 231

A Game of Factors and Multiples



• Write 1, 2 and 3 in corner boxes that fall on a straight line.

• 1, 2 or 3 can be in a box around a number only if it is a multiple or a factor of the number.

• At a time, only one box around a number can be used for a line.

Use different colours for different lines.

One line has been done for you. How many more can you do?

