



# INDIAN SCHOOL AL WADI AL KABIR

Mid-Term Examination (2023-24)

Class: VI

Sub: MATHEMATICS

Max Marks: 80

Date: 21-09-2023

Set -I

Time: 3 hours

## Instructions:

Section A: Multiple Choice Question (Q.1 to Q.15) & Source based Question (Q.16)





Section B: Short Answer Questions of 2 marks each (Q.17 to Q.21)

Section C: Long Answer Questions (Type – 1) of 3 marks each (Q.22 to Q.26)

Section D: Long Answer Questions (Type – 2) of 4 marks each (Q.27 to Q.31)

& Case study Questions (Q.32 to Q.34) of 5 marks each.

<b>Section A: Multiple Choice Question (Q.1 to Q.15) of 1 mark each</b>							
<b>1.</b>	Which is the smallest whole number?						
<b>A</b>	100	<b>B</b>	1	<b>C</b>	2	<b>D</b>	0
<b>2.</b>	The zebra crossing on the roads is an example of:						
<b>A</b>	parallel lines	<b>B</b>	intersecting lines	<b>C</b>	curve	<b>D</b>	polygon
<b>3.</b>	Which of the following number is divisible by 4?						
<b>A</b>	7834	<b>B</b>	582	<b>C</b>	4536	<b>D</b>	654
<b>4.</b>	10 Crores = _____						
<b>A</b>	1 million	<b>B</b>	10 million	<b>C</b>	100 million	<b>D</b>	1000 million
<b>5.</b>	From the choices given below which is the co-prime numbers?						
<b>A</b>	2,4	<b>B</b>	2, 3	<b>C</b>	3, 9	<b>D</b>	5,10
<b>6.</b>	An edge of a table is an example of:						
<b>A</b>	Line	<b>B</b>	Ray	<b>C</b>	Line segment	<b>D</b>	Point

<b>7.</b>	Which is an example of commutative property of addition of whole numbers?							
<b>A</b>	$5 + 0 = 5$	<b>B</b>	$8 + 2 = 2 + 8$	<b>C</b>	$23 \times 12 = 12 \times 23$	<b>D</b>	$2 \times 2 = 4 \times 1$	
<b>8.</b>	The room number of a flat is written in Roman Numeral as XLVII. This can be read in Hindu – Arabic Numeral as:							
<b>A</b>	57	<b>B</b>	45	<b>C</b>	66	<b>D</b>	47	
<b>9.</b>	Which of the following number is a factor of 32?							
<b>A</b>	6	<b>B</b>	4	<b>C</b>	3	<b>D</b>	9	
<b>10.</b>	The population of a state is Nine Million Four Hundred Two Thousand One Hundred Ninety-Five. This can be written as:							
<b>A</b>	9,420,195	<b>B</b>	9,402,195	<b>C</b>	9,402,095	<b>D</b>	9,204,195	
<b>11.</b>	Which of the following is a polygon?							
<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>		
<b>12.</b>	Allen drew a circle with radius 5cm, then the diameter will be:							
<b>A</b>	7cm	<b>B</b>	2cm	<b>C</b>	10cm	<b>D</b>	15cm	
<b>13.</b>	The number of students in a school is 4390. Write the predecessor of the number.							
<b>A</b>	4389	<b>B</b>	4391	<b>C</b>	4300	<b>D</b>	4380	
<b>14.</b>	The answers of four students A, B, C, & D for the prime factorization of 24 are given. Whose answer is correct?							
<b>A</b>	$8 \times 3$	<b>B</b>	$3 \times 2 \times 4$	<b>C</b>	$2 \times 2 \times 2 \times 3$	<b>D</b>	$2 \times 2 \times 6$	
<b>15.</b>	Which of the following are twin primes?							
<b>A</b>	3, 5	<b>B</b>	13, 19	<b>C</b>	11, 17	<b>D</b>	2, 7	

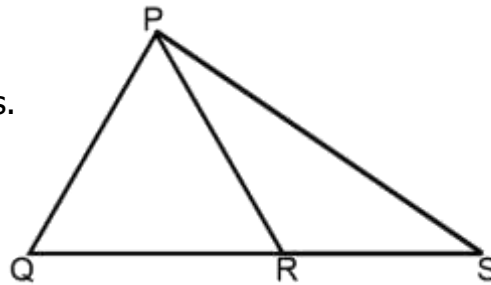
<p><b>16.</b></p>	<p style="text-align: center;"><b>Source based Question -5 Marks</b></p> <p>Observe the given figure and answer the following questions:</p> <div style="text-align: center;"> </div>							
<p><b>I</b></p>	<p>From the figure name the line containing point B.</p>							
<p><b>A</b></p>	$\overleftrightarrow{EA}$	<p><b>B</b></p>	$\overleftrightarrow{FQ}$	<p><b>C</b></p>	$\overleftrightarrow{GC}$	<p><b>D</b></p>	$\overleftrightarrow{HR}$	
<p><b>II</b></p>	<p>A pair of intersecting lines:</p>							
<p><b>A</b></p>	$\overleftrightarrow{EP}, \overleftrightarrow{FQ}$	<p><b>B</b></p>	$\overleftrightarrow{FQ}, \overleftrightarrow{GS}$	<p><b>C</b></p>	$\overleftrightarrow{GS}, \overleftrightarrow{HR}$	<p><b>D</b></p>	$\overleftrightarrow{FQ}, \overleftrightarrow{HR}$	
<p><b>III</b></p>	<p>Which of the following is a line segment?</p>							
<p><b>A</b></p>	$\overline{ED}$	<p><b>B</b></p>	$\overline{BC}$	<p><b>C</b></p>	$\overline{RS}$	<p><b>D</b></p>	$\overline{PQ}$	
<p><b>IV</b></p>	<p>A pair of parallel lines:</p>							
<p><b>A</b></p>	$\overleftrightarrow{HR}, \overleftrightarrow{DT}$	<p><b>B</b></p>	$\overleftrightarrow{BC}, \overleftrightarrow{FQ}$	<p><b>C</b></p>	$\overleftrightarrow{AC}, \overleftrightarrow{HR}$	<p><b>D</b></p>	$\overleftrightarrow{EP}, \overleftrightarrow{FQ}$	
<p><b>V</b></p>	<p>The number of end points in a ray is _____.</p>							
<p><b>A</b></p>	<p>0</p>	<p><b>B</b></p>	<p>1</p>	<p><b>C</b></p>	<p>2</p>	<p><b>D</b></p>	<p>infinite</p>	
<p><b>Section B: Short Answer Questions (Type – 1) of 2 marks each (Q.17 to Q.21)</b></p>								
<p><b>17.</b></p>	<p>A garment factory produces 16,356 shirts, 32,700 trousers and 41,039 jackets in a year. What is the total production of all the three items in that year.</p>							
<p><b>18.</b></p>	<p>Represent <math>11 - 5</math> on the number line.</p>							

<b>19.</b>	Find the common factors of 21 and 18.
<b>20.</b>	Find the sum using suitable rearrangement: $1248 + 763 + 352$
<b>21.</b>	A dealer delivers 148 newspapers every day. How many newspapers will he deliver in the month of September?

**Section C:** Long Answer Questions (Type – 1) of **3** marks each (Q.22 to Q.26)

<b>22.</b>	Find the difference between the greatest and the smallest 5-digit number that can be written using the digits 7, 0, 2, 9, 5 each only once.
<b>23.</b>	Draw a rough sketch of quadrilateral WXYZ and state a) A pair of opposite angles b) A pair of adjacent sides
<b>24.</b>	Using divisibility test, check whether 901352 is divisible by 11. (Show detailed steps)
<b>25.</b>	Find the product by suitable rearrangement: $250 \times 35 \times 40 \times 2$

<b>26.</b>	<p>(a) Identify three triangles in the figure.</p> <p>(b) Write the names of four-line segments.</p> <p>(c) Write the names of four angles.</p>
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**Section D:** Long Answer Questions (Type – 2) (Q.27 to Q.31) of **4** marks each  
& Case study (Q.32 to 34) of **5** marks each

<b>27.</b>	A shopkeeper sold items worth ₹ 3,78,897 in the month of November and items worth ₹ 3,18,501 in the following month. a) What is his total earning during the two months together? b) In which month was the sale lesser and by how much?	
<b>28.</b>	A warehouse holds 9324 shoeboxes. Check whether the number of shoeboxes is: a) Divisible by 9 b) Divisible by 6	
<b>29.</b>	Draw a circle using ruler and compasses and mark the following parts: a) a radius b) a sector c) its centre d) a point in its exterior	
<b>30.</b>	From the given figure a) Write the point in the interior of $\angle AOB$ b) Write a point in the exterior of $\angle BOL$ c) Write the names of any two rays. d) Write the line containing the point O.	
<b>31.</b>	A shopkeeper has 450 math books and 280 English books. She wants to put them into small packets each containing the same number of books. What is the maximum number of books that can be put in each packet?	
<b>32.</b>	<p><b>Case Study-1</b></p> <p>The population of Delhi in 2017 was 19072564 and it increased to 25704625 in 2021.</p> <p>(i) Insert comma and write in words, the population of 2021 in Indian system of numeration. (2m)</p> <p>(ii) Round off the population in 2017 and 2021 to nearest 1000. (2m)</p> <p>(iii) Write the successor of 19072564. (1m)</p>	

**33. Case Study-2**

The school offers you and your two friends the opportunity to purchase a tree sapling in support of Grade VI students Planting Activity, which will promote tree planting practices among students and thus improve our environment. There are 28 boys and 24 girls in the Grade VI class.



- I)** What is the minimum number of trees you will acquire for planting trees, so that they can be distributed equally among all students? (2m)
- II)** Write the prime factorization of 28 using division method. (2m)
- III)** Write first three multiples of 24. (1m)

**34. Case Study-3**

A truck can carry 472 boxes of muffins weighing 16kg each, whereas a van can carry 528 boxes of muffins weighing 16kg each.



- I)** Find the total weight that can be carried by both the vehicles? (2m)
- II)** If the cost of 1 kg of muffins is ₹384, find the cost of 16kg muffins. (2m)
- III)** Which property is demonstrated in the following statement? (1m)


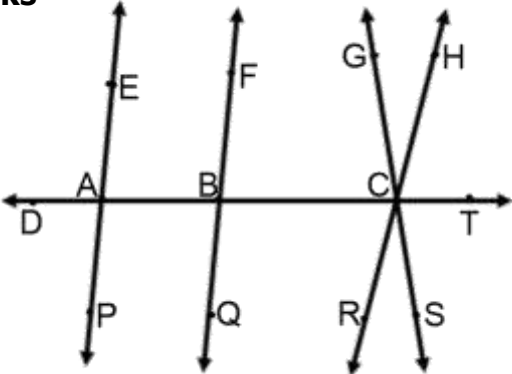
$$47 \times (15 \times 52) = (47 \times 15) \times 52$$

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## ANSWER KEY

### Section A: Multiple Choice Question (Q.1 to Q.15) of 1 mark each

<b>1.</b>	Which is the smallest whole number?						
<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>	0
<b>2.</b>	The zebra crossing on the roads is an example of:						
<b>A</b>	parallel lines	<b>B</b>		<b>C</b>		<b>D</b>	
<b>3.</b>	Which of the following number is divisible by 4?						
<b>A</b>		<b>B</b>		<b>C</b>	4536	<b>D</b>	
<b>4.</b>	10 Crores = _____						
<b>A</b>		<b>B</b>		<b>C</b>	100 million	<b>D</b>	
<b>5.</b>	From the choices given below which is the co-prime numbers?						
<b>A</b>		<b>B</b>	2,3	<b>C</b>		<b>D</b>	
<b>6.</b>	An edge of a table is an example of:						
<b>A</b>		<b>B</b>		<b>C</b>	Line segment	<b>D</b>	
<b>7.</b>	Which is an example of commutative property of addition of whole numbers?						
<b>A</b>		<b>B</b>	$8 + 2 = 2 + 8$	<b>C</b>		<b>D</b>	
<b>8.</b>	The room number of a flat is written in Roman Numeral as XLVII. This can be read in Hindu – Arabic Numeral as:						
<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>	47
<b>9.</b>	Which of the following number is a factor of 32?						
<b>A</b>		<b>B</b>	4	<b>C</b>		<b>D</b>	
<b>10.</b>	The population of a state is Nine Million Four Hundred Two Thousand One Hundred Ninety-Five. This can be written as:						
<b>A</b>		<b>B</b>	9,402,195	<b>C</b>		<b>D</b>	
<b>11.</b>	Which of the following is a polygon?						

	<b>A</b>		<b>B</b>		<b>C</b>		<b>D</b>	
<b>12.</b>	Allen drew a circle with radius 5cm, then the diameter will be:							
	<b>A</b>		<b>B</b>		<b>C</b>	10cm	<b>D</b>	
<b>13.</b>	The number of students in a school is 4390. Write the predecessor of the number.							
	<b>A</b>	4389	<b>B</b>		<b>C</b>		<b>D</b>	
<b>14.</b>	The answers of four students A, B, C, & D for the prime factorization of 24 are given. Whose answer is correct?							
	<b>A</b>		<b>B</b>		<b>C</b>	$2 \times 2 \times 2 \times 3$	<b>D</b>	
<b>15.</b>	Which of the following are twin primes?							
	<b>A</b>	3, 5	<b>B</b>		<b>C</b>		<b>D</b>	
<b>16.</b>	<p style="text-align: center;"><b>Source based Question -5 Marks</b></p> <p>Observe the given figure and answer the following questions:</p> <div style="text-align: center;">  </div>							
<b>I</b>	From the figure name the line containing point B.							
	<b>A</b>		<b>B</b>	FQ	<b>C</b>		<b>D</b>	
<b>II</b>	A pair of intersecting lines:							
	<b>A</b>		<b>B</b>		<b>C</b>	GS, HR	<b>D</b>	
<b>III</b>	Which of the following is a line segment?							
	<b>A</b>		<b>B</b>	BC	<b>C</b>		<b>D</b>	
<b>IV</b>	A pair of parallel lines:							

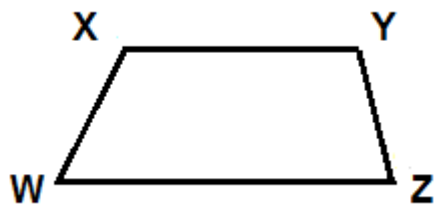


	A	B	C	D	EP, FQ
<b>V</b>	The number of end points in a ray is _____.				
	A	B	1	C	D
<b>Section B: Short Answer Questions (Type – 1) of 2 marks each (Q.17 to Q.21)</b>					
<b>17.</b>	<p>A garment factory produces 16,356 shirts, 32,700 trousers and 41,039 jackets in a year. What is the total production of all the three items in that year.</p> <p><b>ANS:</b> No. of shirts = 16,356  No. of trousers = 32,700  No. of jackets = 41,039 .....(<math>\frac{1}{2}</math>m)  Total production of all three items = <math>(16,356 + 32,700) + 41,039</math> .....(<math>\frac{1}{2}</math>m)  = <math>49,056 + 41,039</math>.....(<math>\frac{1}{2}</math>m)  = <math>90,095</math> .....(<math>\frac{1}{2}</math>m)</p>				
<b>18.</b>	<p>Represent <math>11 - 5</math> on the number line.</p> <p><b>Ans:</b> Number line (1m)  Showing jumping and circling answer (1m)</p>				
<b>19.</b>	<p>Find the common factors of 21 and 18.</p> <p><b>Ans:</b> Factors of 21 = 1, 3, 7, 21.....(<math>\frac{1}{2}</math>m)  Factors of 18 = 1, 2, 3, 6, 9, 18.....(<math>\frac{1}{2}</math>m)  Common factors = 1, 3. ....(1m)</p>				
<b>20.</b>	<p>Find the sum using suitable rearrangement: <math>1248 + 763 + 352</math></p> <p><b>Ans:</b> <math>1248 + 763 + 352 = (1248 + 352) + 763</math> .....(<math>\frac{1}{2}</math>m)  = <math>1600 + 763</math> .....(<math>\frac{1}{2}</math>m)  = <math>2363</math>.....(1m)</p>				
<b>21.</b>	<p>A dealer delivers 148 newspapers every day. How many newspapers will he deliver in the month of September?</p> <p><b>Ans:</b> No. of newspapers delivering everyday = 148 .....(<math>\frac{1}{2}</math>m)</p>				

No. of days in September = 30 .....( $\frac{1}{2}$ m)
Total number of newspapers deliver in September = $148 \times 30 = 4440$ .....(1m)

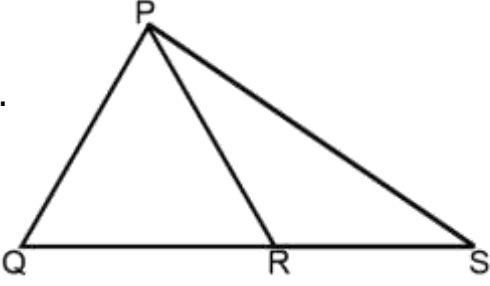
**Section C:** Long Answer Questions (Type – 1) of **3** marks each (Q.22 to Q.26)

<b>22.</b>	<p>Find the difference between the greatest and the smallest 5-digit number that can be written using the digits 7, 0, 2, 9, 5 each only once.</p> <p><b>Ans:</b> Greatest number = 97520.....(1m)</p> <p>Smallest number = 20579.....(1m)</p> <p>Difference = <math>97520 - 20579 = 76941</math>.....(<math>\frac{1}{2} + \frac{1}{2}</math>m)</p>
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<b>23.</b>	<p>Draw a rough sketch of quadrilateral WXYZ and state</p> <p>c) A pair of opposite angles d) A pair of adjacent sides</p> <p><b>Ans:</b> Drawing .....(1m)</p> <p>a) <math>(\angle X, \angle Z)</math> OR <math>(\angle Y, \angle W)</math> .....(1m) b) <math>(XW, WZ)</math> OR <math>(WZ, ZY)</math> OR <math>(ZY, YX)</math> OR <math>(YX, XW)</math> .....(1m)</p>	
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<b>24.</b>	<p>Using divisibility test, check whether 901352 is divisible by 11. (Show detailed steps)</p> <p><b>Ans:</b> Sum of odd place digits = <math>2 + 3 + 0 = 5</math> .....(1m)</p> <p>Sum of even place digits = <math>5 + 1 + 9 = 15</math>.....(1m)</p> <p>Difference = <math>15 - 5 = 10</math>, not divisible by 11.....(1m)</p>
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<b>25.</b>	<p>Find the product by suitable rearrangement: <math>250 \times 35 \times 40 \times 2</math></p> <p><b>Ans:</b> <math>250 \times 35 \times 40 \times 2</math></p> <p>= <math>(250 \times 40) \times 35 \times 2</math> .....(1m)</p> <p>= <math>10000 \times 70</math> .....(1m)</p> <p>= <math>700000</math>.....(1m)</p>
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<b>26.</b>	<p>(a) Identify three triangles in the figure.</p> <p>(b) Write the names of four-line segments.</p> <p>(c) Write the names of four angles.</p> <p><b>Ans:</b> a) <math>\triangle PQR, \triangle PRS, \triangle PQS</math> .. (1m)</p> <p>b) PQ, PR, PS, QR, RS, QS (ANY 4)... (1m)</p> <p>c) <math>\angle PQR, \angle PRS, \angle PSR, \angle PRQ, \angle QPS</math> (ANY 4)... (1m)</p>	
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**Section D:** Long Answer Questions (Type – 2) (Q.27 to Q.31) of **4** marks each  
& Case study (Q.32 to 34) of **5** marks each

<b>27.</b>	<p>A shopkeeper sold items worth ₹ 3,78,897 in the month of November and items worth ₹ 3,18,501 in the following month.</p> <p>c) What is his total earning during the two months together?</p> <p>d) In which month was the sale lesser and by how much?</p> <p><b>Ans:</b> a) Earning in November = 378897.....(<math>\frac{1}{2}</math>m)</p> <p>Earning in December = 318501.....(<math>\frac{1}{2}</math>m)</p> <p>Total earning in 2 months = <math>378897 + 318501 = ₹697398</math> .....(1m)</p> <p>b) In December by <math>378897 - 318501 = ₹60396</math>.....(1m + 1m)</p>
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<b>28.</b>	<p>A warehouse holds 9324 shoeboxes. Check whether the number of shoeboxes is:</p> <p>c) Divisible by 9</p> <p>d) Divisible by 6</p> <p><b>Ans:</b> a) Sum of digits = <math>9 + 3 + 2 + 4 = 18</math>, Divisible by 9 ..... (1m + 1m)</p> <p>b) 9324 is divisible by 2, since it is an even number.</p> <p><math>9 + 3 + 2 + 4 = 18</math>, divisible by 3.</p> <p>Since it is divisible by both 2 and 3, 9324 is divisible by 6..... (1m + 1m)</p>
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<b>29.</b>	<p>Draw a circle using ruler and compasses and mark the following parts:</p> <p>e) a radius</p> <p>f) a sector</p> <p>g) its centre</p> <p>h) a point in its exterior</p> <p>Ans: 1 mark each</p>
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<b>30.</b>	<p>From the given figure</p> <p>e) Write the point in the interior of <math>\angle AOB</math></p>	
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- f) Write a point in the exterior of  $\angle BOL$   
 g) Write the names of any two rays.  
 h) Write the line containing the point O.

Ans: a) point Q .....(1m)  
 b) Q, A, R, K (any one point) .....(1m)  
 c) OK, OA, OB, OL (any 2) .....(1m)  
 d) Line KL.....(1m)

**31.** A shopkeeper has 450 math books and 280 English books. She wants to put them into small packets each containing the same number of books. What is the maximum number of books that can be put in each packet?

Ans: No. of Math books = 450.....( $\frac{1}{2}$ m)  
 No. of English books = 280.....( $\frac{1}{2}$ m)  
 The greatest number of books that can be put in each packet? = HCF (450, 280) .....(1m)

2	450
3	225
3	75
5	25
5	

2	280
2	140
2	70
5	35
7	7
	1

$450 = 2 \times 3 \times 3 \times 5 \times 5$ .....( $\frac{1}{2}$ m)

$280 = 2 \times 2 \times 2 \times 5 \times 7$ .....( $\frac{1}{2}$ m)

HCF =  $2 \times 5 = 10$ .....(1m)

**32. Case Study-1**

The population of Delhi in 2017 was 19072564 and it increased to 25704625 in 2021.

- (iv) Insert comma and write in words the population of 2021 in Indian system of numeration. (2m)
- (v) Round off the population in 2017 and 2021 to nearest lakh.
- (vi) Write the successor of 19072564. (1m)



Ans: i) 2,57,04,625 – Two crore fifty-seven lakh four thousand six hundred twenty-five.(1 +1m)  
 ii) In 2017- 19073000; In 2021 – 25705000  
 iii) 19072565

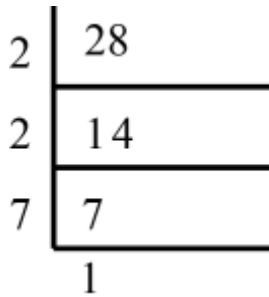
**33. Case Study-2**

The school offers you and your two friends the opportunity to purchase a tree sapling in support of Grade VI students Planting Activity, which will promote tree planting practices among students and thus improve our environment. There are 28 boys and 24 girls in the Grade VI class.

- IV)** What is the minimum number of trees you will acquire for planting trees, so that they can be distributed equally among all students?
- V)** Write the prime factorization of 28 using division method.
- VI)** Write first three multiples of 24.

Ans: I) The minimum number of trees you will acquire for planting trees = LCM (28, 24)  
 LCM =  $2 \times 2 \times 2 \times 3 \times 7 = 168$  (1m + 1m)

II)



$$28 = 2 \times 2 \times 7 \text{ (1m + 1m)}$$

2	24	28
2	12	14
2	6	7
3	3	7
7	1	7
	1	1

III) Multiples of 24 = 24, 48, 72 .....(1m)

**34. Case Study-3**

A truck can carry 472 boxes of muffins weighing 16kg each, whereas a van can carry 528 boxes of muffins weighing 16kg each.

- IV)** Find the total weight that can be carried by both the vehicles?
- V)** If the cost of 1 kg of muffins is ₹384, find the cost of 16kg muffins.
- VI)** Which property is demonstrated in the following statement?

$$47 \times (15 \times 52) = (47 \times 15) \times 52$$

Ans: I) Total weight =  $16 \times (472 + 528)$  .....(1m)

$$= 16 \times 1000 = 16000\text{kg} \dots\dots\dots (\frac{1}{2}\text{m} + \frac{1}{2}\text{m})$$

II) Cost of 16 kg muffins =  $384 \times 16 = ₹6144$  ..... (1m + 1m)

III) Associativity of multiplication.....(1m)

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