unamadoo Boost	Class –VIII Mathematics (Ex. 7.1) Answers					
1.	(i)	216	Prime factors of 216 = 2 x 2 x 2 x 3 x 3 x 3 Here all factors are in groups of 3's (in triplets) Therefore, 216 is a perfect cube number.		216 108 54 27 9 3	
	(ii)	128	Prime factors of 128 = 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 Here one factor 2 does not appear in a 3's group. Therefore, 128 is not a perfect cube.		128 64 32 16	
	(iii)	1000		2 2 2 2	8 4 2 1 1 1000	
			Prime factors of $1000 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$ Here all factors appear in 3's group. Therefore, 1000 is a perfect cube.	2 5 5 5	500 250 125 25 5 1	
	(iv)	100	Prime factors of 100 = 2 x 2 x 5 x 5	2	100 50	
			Here all factors do not appear in 3's group. Therefore, 100 is not a perfect cube.	<u>5</u> 5	25 5 1	

	(v)	46656		
		Prime factors of 46656 = 2 x 2 x 2 x 2 x 2 x 2 x 3 x 3 x 3 x 3 x	2	46656
		Here all factors appear in 3's group.	2	23328
		Therefore, 46656 is a perfect cube.	2	11664
			2	5832
			2	2916
			2	1458
			3	729
			3	243
			3	81
			3	27
			3	9
			3	3
				1
2.	(i)	243		
		Prime factors of 243 = 3 x 3 x 3 x 3 x 3 x 3	3	243
		Here 3 does not appear in 3's group.	3	81
		Therefore, 243 must be multiplied by 3 to make it a perfect cube.	3	27
			3	9
			3	3
				1
	(ii)	256		
		Prime factors of 256 = 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2	2	256
		Here one factor 2 is required to make a 3's group.	2	128
		Therefore, 256 must be multiplied by 2 to make it a perfect cube.	2	64
			2	32
			2	16
			2	8
			2	4
			2	2
				1

(iii) 72

Prime factors of $72 = 2 \times 2 \times 2 \times 3 \times 3$ Here 3 does not appear in 3's group. Therefore, 72 must be multiplied by 3 to make it a perfect cube.

2	72
2	36
2	18
3	9
3	3
	1

	(iv)	675		
		Prime factors of 675 = 3 x 3 x 3 x 5 x 5	3	675
		Here factor 5 does not appear in 3's group.	3	225
		Therefore 675 must be multiplied by 3 to make it a perfect cube.	3	75
			5	25
			5	5
				1
	(17)	100		
	(•)	$Prime factors of 100 - 2 \times 2 \times 5 \times 5$	2	100
		Finite factors of 100 – $2 \times 2 \times 5 \times 5$	2	<u> </u>
		Therefore 100 most have biglight 2 for 10 to make it	 	25
		Therefore 100 must be multiplied by $2 \times 5 = 10$ to make it	5 5	<u></u> 5
		a perfect cube.		<u> </u>
3.	(i)	81		
		Prime factors of 81 = 3 x 3 x 3 x 3	3	81
		Here one factor 3 is not grouped in triplets.	3	27
		Therefore 81 must be divided by 3 to make it a perfect cube.	3	9
			3	3
				1
	(ii)	128		
		Prime factors of 128 = 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2	2	128
		Here one factor 2 does not appear in a 3's group.	2	64
		Therefore, 128 must be divided by 2 to make it a perfect cube.	2	32
			2	16
			2	8

(iii)	135
	Prime factors of 135 = 3 x 3 x 3 x 5
	Here one factor 5 does not appear in a triplet.
	Therefore, 135 must be divided by 5 to make it a perfect cube.

	10
2	8
2	4
2	2
	1
	1

3	135
3	45
3	15
5	5
	1

(iv)	192		
	Prime factors of 192 = 2 x 2 x 2 x 2 x 2 x 2 x 3	2	192
	Here one factor 3 does not appear in a triplet.	2	96
	Therefore, 192 must be divided by 3 to make it a perfect cube.	2	48
		2	24
		2	12
		2	6
		3	3
			1
(v)	704		
	Prime factors of 704 = 2 x 2 x 2 x 2 x 2 x 2 x 11	2	704
	Here one factor 11 does not appear in a triplet.	2	352
	Therefore, 704 must be divided by 11 to make it a perfect cube.	2	176
		2	88
		2	44

4.	Given numbers = $5 \times 2 \times 5$
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Since, Factors of 5 and 2 both are not in group of three. Therefore, the number must be multiplied by $2 \ge 2 \ge 20$ to make it a perfect cube. Hence he needs 20 cuboids.

	Class –VIII Mathematics (Ex. 7.2) Answers				
1.	(i)	64		1	
		$\sqrt[3]{64} = \sqrt[3]{2 \times 2 \times 2 \times 2 \times 2 \times 2}$	2	64	
		$\sqrt[3]{64} = 2 \times 2$	2	32	
		= 4	2	16	
		-	2	8	
			<u></u>	4	
			<u></u>	<u> </u>	
	(ii)	512			
	()	$\frac{3}{512} - \frac{3}{2} \times 2 \times$	2	512	
		$\sqrt{312} = \sqrt{2 \times 2 \times 2}$	2	256	
		$= 2 \times 2 \times 2$	2	128	
		= 8	2	64	
			2	32	
			2	16	
			2	8	
			2	4	
			2	2	
				1	
	()	10(10			
	(111)	10648	0	10640	
		$\sqrt[3]{10648} = \sqrt[3]{2 \times 2 \times 2 \times 11 \times 11 \times 11}$	<u></u>	10648	
		$= 2 \times 11$	<u></u>	5324	
		= 22	<u> </u>	1221	
			<u> </u>	1331	
			<u> </u>	121	
				1	
	(iv)	27000			
		$\sqrt[3]{27000} = \sqrt[3]{2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$	2	27000	
		$= 2 \times 3 \times 5$	2	13500	
		= 30	2	6750	
			3	3375	
				1125	
			3	375	
			<u>5</u>	125	
			<u>5</u>	25 -	
			5	5	

(v)	15625		
	$\sqrt[3]{15625} = \sqrt[3]{5 \times 5 \times 5 \times 5 \times 5}$	5	15625
	= 5 x 5	5	3125
	= 25	5	625
		5	125
		5	25
		5	5
(vi)	13824		1
	$\sqrt[3]{13824} = \sqrt[3]{2 \times 2 \times 3 \times 3 \times $	2	13824
	$= 2 \times 2 \times 2 \times 3$	2	6912
	= 24	2	3456
		2	1728
		2	864
		2	432
		2	216
		2	108
		2	54
		3	27
		3	9
		3	3
(vii)	110592		1
()	$\sqrt[3]{110592} = \sqrt[3]{2 \times 2 \times$	2	110592
	$= 2 \times 2 \times 2 \times 2 \times 3$	2	55296
	= 48	2	27648
		2	13824
		2	6912
		2	3456
		2	1728
		2	864
		2	432

9 3

$\sqrt[3]{46656} = \sqrt[3]{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times $		(viii)	46656		
$ = 2 \times 2 \times 3 \times 3 = 36 $ $ = 36 $ $ = 36 $ $ = 2 \times 2 \times 3 \times 3 = 36 $ $ = 2 \times 2 \times 3 \times 3 = 36 $ $ = 2 \times 2 \times 3 \times 3 = 36 $ $ = 36 $ $ = 2 \times 2$			$\sqrt[3]{46656} = \sqrt[3]{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times $	_ 2	46656
= 36 $= 36$			$= 2 \times 2 \times 3 \times 3$	2	23328
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times 7 \times 7 \times $			= 36	2	11664
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times 7 \times 7$				2	5832
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times$				2	2916
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times$				2	1458
(ix) 175616 $\sqrt{175616} = 2 \times 2 \times$				3	729
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times 7 \times 7$				3	243
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times 7 \times 7$				3	81
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times 7 \times 7$				3	27
(ix) $\frac{175616}{\sqrt[3]{175616}} = \sqrt[3]{2} \times 2 \times$				3	9
(ix) 175616 $\sqrt[3]{175616} = \sqrt[3]{2 \times 2 \times$				3	3
(ix) $\frac{175616}{\sqrt[3]{175616}} = \sqrt[3]{2 \times 2 \times 7 \times 7$		(°.)			1
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5} = 3 \times 3 \times 5 = 45$ 2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125,$ are all odd. (ii) True Since, a perfect cube ends with three zeroes.		(IX)	$\frac{1}{5616} = \sqrt[3]{2 \times 2 \times 7 \times 7$	2	175616
$= 56$ $= 56$ $= 2 43904$ $= 2 43904$ $= 2 21952$ $= 2 5488$ $= 2 2744$ $= 2 1372$ $= 2 686$ $= 7 343$ $= 7 49$ $= 7 7 49$ $= 7 7 49$ $= 7 7 7$ $= 3 \times 3 \times 5$ $= 45$ $= 45$ $= 45$ $= 45$ $= 45$ $= 45$ $= 3 \times 3 \times 5$ $= 45$ $= 45$ $= 3 \times 3 \times 5$ $= 45$ $= 3 \times 3 \times 5$ $= 5 25$ $= 3 \times 3 \times 5$ $= 5 25$ $= 3 \times 3 \times 5$ $= 5 25$			$-2 \times 2 \times$	2	87808
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2 21952 2 10976 2 5488 2 2744 2 1372 2 686 7 343 7 49 7 7 7 1 1 1 (x) 91125 $= \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ = 45 2. (i) False Since, 1 ³ = 1,3 ³ = 27,5 ³ = 125, are all odd. (ii) True Since, a perfect cube ends with three zeroes.			- 56	2	43904
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, 1 ³ = 1,3 ³ = 27,5 ³ = 125, are all odd. (ii) True Since, a perfect cube ends with three zeroes.			- 50	2	21952
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 (x) 91125 = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5} $= 3 \times 3 \times 5$ = 45 (x) 91125 = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5} $= 3 \times 3 \times 5$ = 45 (x) 91125 = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5} $= 3 \times 3 \times 5$ = 45 (x) 91125 = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5} $= 3 \times 3 \times 5$ = 45 (x) 91125 = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5} $= 3 \times 3 \times 5$ = 45 (x) 91125 = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5} $= 3 \times 3 \times 5$ $= 5 \times 5$ = 5				2	10976
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, 1 ³ = 1,3 ³ = 27,5 ³ = 125, are all odd. (ii) True Since, a perfect cube ends with three zeroes. $\frac{2}{2744}$ $2}{3372}$ $\frac{3}{91125}$ $\frac{3}{30375}$ $\frac{3}{30375}$ $\frac{3}{30375}$ $\frac{3}{30375}$ $\frac{3}{30375}$ $\frac{3}{30375}$ $\frac{3}{5}$				2	5488
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, 1 ³ = 1,3 ³ = 27,5 ³ = 125, are all odd. (ii) True Since, a perfect cube ends with three zeroes.				2	2744
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, 1 ³ = 1,3 ³ = 27,5 ³ = 125, are all odd. (ii) True Since, a perfect cube ends with three zeroes.				2	1372
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, 1 ³ = 1,3 ³ = 27,5 ³ = 125, are all odd. (ii) True Since, a perfect cube ends with three zeroes. $\frac{7}{49}}{7}$ $\frac{3}{33375}$ $\frac{3}{30375}}{\frac{3}{5}}$ $\frac{3}{5}}$ $\frac{3}{5}}$ $\frac{3}{5}}$ $\frac{3}{5}}$ $\frac{3}{5}$ $\frac{3}{5}}$ $\frac{3}{5}$ $\frac{3}{5}}$ $\frac{3}{5}$ $\frac{3}{5}}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{10125}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{10125}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{3}{5}$ $\frac{10}{5}$ $\frac{1}{5}$ 1				2	686
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes.				7	343
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes.				7	49
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes.				7	7
(x) 91125 $\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}$ $= 3 \times 3 \times 5$ = 45 2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes. $3 \frac{91125}{3} \frac{3}{30375} \frac{3}{3} \frac{10125}{3} \frac{3}{3} \frac{375}{5} \frac{5}{5} \frac{125}{5} \frac{5}{5} $					1
$ \frac{\sqrt[3]{91125} = \sqrt[3]{3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 \times 5}}{= 3 \times 3 \times 5} = 45 $ 2. (i) False Since, 1 ³ = 1,3 ³ = 27,5 ³ = 125, are all odd. (ii) True Since, a perfect cube ends with three zeroes. $ \frac{3 91125}{3 30375} = \frac{3}{3} \frac{30375}{3 10125} = \frac{3}{3} \frac{30375}{5 125} = \frac{3}{5} \frac{3}{5}$		(x)	91125		
$= 3 \times 3 \times 5$ = 45 3 30375 3 10125 3 3375 3 1125 3 375 3 1125 3 375 5 125 5 125 5 25 5 5 5 125 5 5 5 125 5 5 5 125 5 5 5 125 5 5 5 125 5 5 5 125 5 12		()	$\sqrt[3]{91125} = \sqrt[3]{3\times3\times3\times3\times3\times3\times5\times5\times5}$	3	91125
= 45 $= 45$ $= 45$ $= 45$ $= 45$ $= 45$ $= 3 10125$ $= 3 3375$ $= 3 1125$ $= 3 375$ $= 5 125$ $= 5 55$ $= 5 55$ $= 5 55$ $= 5 5$ $= 10 5$ $= 5 5 5$ $= 5 5 5$ $= 5 5 5$ $= 5 5 5 5$ $= 5 5 5 5$ $= 5$			$= 3 \times 3 \times 5$	3	30375
2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125,$ are all odd. (ii) True Since, a perfect cube ends with three zeroes. 3 3375 3 1125 3 375 5 125 5 25 5 5 125 5 5 5 125 5 5 5 125 5 5 125 5 125 5 5 125 5 5 125 5 5 5 125 5 5 125 5 5 125 5 5 125 5 5 125 5 5 125 5 5 5 125 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 5 5 125 5 5 5 125 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 5 125 5 5 5 125 5 5 5 125 5 125 5 5 5 125 5 5 5 5 125 5 5 5 125 5 5 5 125 5 125 5 125 5 125 5 5 5 125 1			= 45	3	10125
2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125,$ are all odd. (ii) True Since, a perfect cube ends with three zeroes. $\frac{3 & 1125}{3 & 375} \\ 5 & 25} \\ 5 & 5 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\$				3	3375
2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125,$ are all odd. (ii) True Since, a perfect cube ends with three zeroes. $\frac{3 375}{5 125}$ $\frac{5 525}{5 5}$ $\frac{1}{5} 5$				3	1125
2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes. $\frac{5 125}{5 25}$ $\frac{5 5}{125}$				3	375
2. (i) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes. $\frac{5 25}{5 5}$ 1				5	125
2. (1) False Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes.	n	(;)		5	25
Since, $1^3 = 1, 3^3 = 27, 5^3 = 125, \dots$ are all odd. (ii) True Since, a perfect cube ends with three zeroes.	Ζ.	(1)	Faise	5	5
(ii) True Since, a perfect cube ends with three zeroes.			Since, $1^{5} = 1, 3^{5} = 27, 5^{5} = 125, \dots$ are all odd.		1
		(ii)	True Since, a perfect cube ends with three zeroes.		

e.g. $10^3 = 1000, 20^3 = 8000, 30^3 = 27000, \dots$ so on

(iii)	False	
	Since, $5^2 = 25, 5^3 = 125, 15^2 = 225, 15^3$	$b^3 = 3375$
	(Did not end with 25)	
(iv)	False	
	Since $12^3 = 1728$	[Ends with 8]
	And $22^3 = 10648$	[Ends with 8]
(v)	False	
	Since $10^3 = 1000$	[Four digit number]
	And $11^3 = 1331$	[Four digit number]
(vi)	False	
	Since $99^3 = 970299$	[Six digit number]
(vii)	True	
	$1^3 = 1$	[Single digit number]
	$2^3 = 8$	[Single digit number]

3. We know that $10^3 = 1000$ and Possible cube of $11^3 = 1331$ Since, cube of unit's digit $1^3 = 1$ Therefore, cube root of 1331 is 11.

4913 We know that $7^3 = 343$ Next number comes with 7 as unit place $17^3 = 4913$ Hence, cube root of 4913 is 17.

12167 We know that $3^3 = 27$ Here in cube, ones digit is 7 Now next number with 3 as ones digit $13^3 = 2197$ And next number with 3 as ones digit $23^3 = 12167$ Hence cube root of 12167 is 23.

32768 We know that $2^3 = 8$ Here in cube, ones digit is 8 Now next number with 2 as ones digit $12^3 = 1728$ And next number with 2 as ones digit $22^3 = 10648$ And next number with 2 as ones digit $32^3 = 32768$ Hence cube root of 32768 is 32.