Math 10

Lesson 1–3 Answers

**Lesson Questions**

**Question 1**

|  |  |
| --- | --- |
| 12 = 1  22 = 4  32 = 9  42 = 16  52 = 25  62 = 36 | 72 = 49  82 = 64  92 = 81  102 = 100  112 = 121  122 = 144 |

**Question 2**

1296 = 2 · 2 · 2 · 2 · 3 · 3 · 3 · 3

= (2 · 2 · 3 · 3) · (2 · 2 · 3 · 3)

= 36 · 36



**Question 3**

Write the first 10 perfect cubes and their cube roots.

|  |  |
| --- | --- |
| 13 = 1  23 = 8  33 = 27  43 = 64  53 = 125 | 63 = 216  73 = 343  83 = 512  93 = 729  103 = 1000 |

**Question 4**

1728 = 2 · 2 · 2 · 6 · 6 · 6

= (2 · 6) · (2 · 6) · (2 · 6)

= 12 · 12 · 12



**Question 5**

What are the index and radicand for each of the following:

  

index = 3 index = 4 index = 2

radicand = 4 radicand = 3 radicand = 5

**Question 6**

(a) 9 x 9 = 81



(b) 7 x 7 = 49 and 8 x 8 = 64 try 7.2



(c) 4 x 4 x 4 = 64



(d) 33 = 27 and 43 = 64 so try 3.7 and 3.8



(e) 24 = 16 and 34 = 81 so try 2.7



**Assignment**

1. a)  d) 

2. a)  d) 

3. a) 225 = 32 · 52 = (3 · 5)2 Perfect square

b) 729 = 36 = (33)2 = (32)3 Perfect square and perfect cube

c) 1944 = 23 · 35 Neither

d) 1444 = 22 · 192 = (2 · 19)2 Perfect square

e) 4096 = 212 = (24)3 = (26)2 Perfect square and perfect cube

f) 13824 = 29 · 33 = (23 · 3)3 Perfect cube

4. a)  b) 

5. a)  b) 

6. Find edge length first



Surface area (SA) = 6 · x2 = 6 · 42 = 96 ft.2

7.



8. 

No; 2000 is not a perfect cube.

9. The first 5 are: 1, 64, 729, 4096, 15625



10.

11.



12. a) b) 

13. Through trial and error: 13 + 123, 93 + 103

14. Find edge length first

m

SA = 6 · x2 = 6 · 132 = 1014 m3

1014 ÷ 40 = 25.35

26 cans of paint are required