

## Solutions & Winners

### Kids' 'X' Word Solution

1	R	2	O	3	S	4	E	⊙	5	P
6	I	N	S	E	7	C	T			
8	V	E	R	S	E	S				
	E	⊙	⊙	⊙	9	N	O			
10	R	11	E	12	S	13	E	T	⊙	
	⊙	14	I	N	G	⊙	15	O		

### Kids Challenge!

Did you find the word?  
It is "TRUST".

### Smart kids :

1. Sravya Ainapurapu, St. Louis.
2. Sruthi Ainapurapu, St. Louis.
3. D. Aditya, Lucknow.
4. P. Sneha, Delhi.
5. B. Sagar, Nagpur.

### Kids' 'X'word Winners:

1. Sruthi Ainapurapu, St. Louis.
2. Sravya Ainapurapu, St. Louis.
3. D. Aditya, Lucknow.

### Salutation to your solution! - Answers

1. The wholesale dealer buys hundred-20lb coffee bags at the rate of \$5/lb. So the total cost is  $100 \times 20 \times 5 = \$10000$ . The wholesale dealer sells the bags at \$6.25/lb, \$6.35/lb, \$6.4/lb respectively if they buy minimum of 50-20 pound bags, 30-20pound bags and 20-20 pound bags. The retail shop owners bought 50, 30, 20 bags each weighing 20 pounds. So those retail shop owners' cost price of coffee powder is \$6.25, \$6.35, \$6.40 respectively. Adding profit to the cost price, the retailers' advertised prices are \$6.56/lb, \$6.86 and \$7.04/lb respectively. As per the promotion, when customer buys 5 pounds, he gets another pound free. So the customer needs to buy 7 pounds. First retail shop owner is selling coffee at the rate of \$6.56/lb, which is cheaper. So 8 pounds cost approximately \$45.94.
2. 4999950000.

**Solution:** Let us take sum of numbers from 1 to 9, which is equal to 45.

(The formula for sum of n natural numbers =  $n(n+1)/2$ .)

Sum of numbers from 1 to 99, which is equal to 4950.

Sum of numbers from 1 to 999, which is equal to 499500.

Thus, sum of numbers from 1 to 99999 is 4999950000.

3. (a) 72.

(b) 294.

**Solution:**

(a) 2, 6, 12, 20, 30, 42, 56 follows the equation  $(n^2 + n)$ . In this sequence, the next number is  $(8^2 + 8)$ , which is equal to 72.

(b) The formula used here  $n^2(n-1)$ . Following this pattern ...

$$1^2 \times 0 = 0; \quad 2^2 \times 1 = 4; \quad 3^2 \times 2 = 18; \quad 4^2 \times 3 = 48$$

$$5^2 \times 4 = 100; \quad 6^2 \times 5 = 180 \quad 7 \times 6 = 294.$$

**4. 6006 square cm.**

**Solution:** For finding the area of metal plate, we need to find the total surface area of the capsule. The total surface area of capsule is equal to the lateral surface area of cylindrical portion and surface areas of hemispheres.  $r = 21/2$ ;  $h = 70$

$$\begin{aligned} \text{Lateral surface area of cylinder} &= 2 \times \pi \times r \times h = 2 \times (22/7) \times (21/2) \times 70 \\ &= 4620 \text{ Sq. Cm.} \end{aligned}$$

Adding the lateral surface area of two hemispheres (not considering the base) is equal to the lateral surface area of sphere.

$$\begin{aligned} \text{Lateral surface area of sphere} &= 4 \times \pi \times r^2 = 4 \times (22/7) \times (21/2)^2 \\ &= 1386 \text{ Sq. Cm.} \end{aligned}$$

So area of metal plate required = 6006 Sq. Cm.

**5. Six circles.**

**Solution:**

Whatever may be the diameter of the circle, when we draw circles of same diameter around it touching the base circle and adjacent circles, only six circles will be accommodated. Logically thinking, The angle at the center is  $360^\circ$ . When we divide the angle into 6 equal parts, then each of the circle (touching the original circle) will fit into one part. You can try this with quarters, dimes etc.

**Salutation to your solution! - Winners:**

1. Vaasanti Maghapu, California.
2. Ravi Bhagavatula, Chicago.
3. T. Anoop, East Godavari, India.

**Question Gallery! - We ourselves disclosing answers!!**

1. Thames river flows through London, England.
2. The author of 'My music, my love' is Ravi Shankar.
3. Kandla is a seaport in Kutch District of Gujarat state in western India. Located on the Gulf of Kutch, it is one of major ports on west coast.
4. In Roman number notation, **XCIX** is equal to 99.
5. The capital of Barbados is Bridgetown.
6. Pomology deals with raising fruit trees and productivity of fruits.
7. One Terabyte is equal to  $10^{12}$  bytes. 1 TeraByte =  $10^{12}$  Bytes.
8. Symbol of Curium is Cm.
9. Sir Alexander Fleming (6 August 1881 - 11 March 1955) was a Scottish biologist and pharmacologist. Fleming published many articles on bacteriology, immunology and chemotherapy. His best-known achievements are the discovery of the enzyme lysozyme in 1923 and the antibiotic substance penicillin from the fungus *Penicillium notatum* in 1928, for which he shared the Nobel Prize in Physiology or Medicine in 1945 with Howard Walter Florey and Ernst Boris Chain.
10. Ampere is used in Physics. Ampere is the unit used to measure electric current.

**Question Gallery! - Winners :** 1. Vaasanti Maghapu, California.

2. Sreekanth Gutala, St. Louis.
3. Ravi Bhagavatula, Chicago.
4. T. Anoop, East Godavari Dt.