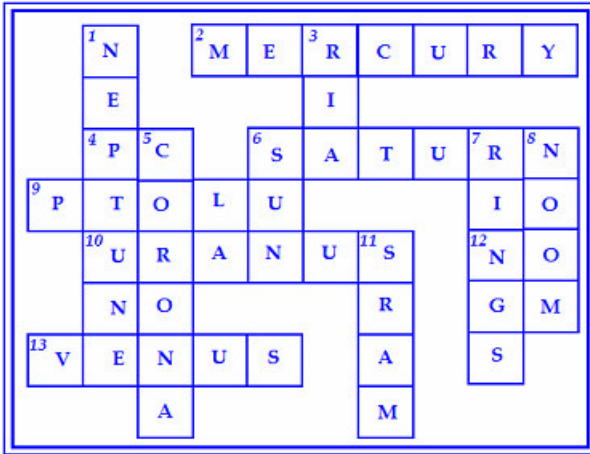


Solutions & Winners

Kids' 'X' Word Solution



Kids Challenge!

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

Smart kids :

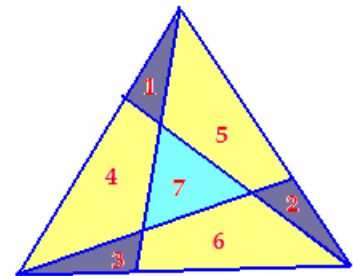
1. Sravya Ainapurapu, St. Louis.
2. Sruthi Ainapurapu, St. Louis.
3. Manisha Sharma, Pune.

Kids' 'X'word Winners:

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

Salutation to your solution! - Answers

1. As shown in the adjacent figure, three of the parts area is $\frac{1}{21}$, three of the parts area is 5 times $\frac{1}{21}$ and one more part's area is 3 times $\frac{1}{21}$. So ratio of areas is 1 (3 parts): 5 (3 parts) : 3 (1 part). So parts shown by 1, 2, 3 are having an area $\frac{1}{21}$; parts shown by 4, 5, 6 are having an area $\frac{5}{21}$; part shown by 7 is having an area $\frac{3}{21}$.



2. 100.

Solution: If we notice the sequence $2 - 4 + 6 - 8 + 10 \dots 198$, we can figure out that 198 is 99th number. These numbers are in arithmetic progression, but the signs are positive and negative alternatively. If we keep the first number 2 aside, every two numbers after 2 adds upto 2. The numbers divisible by 4 are having negative sign. So 196 posses negative sign and 198 posses positive sign. Leaving first number 2, rest 98 numbers adds to 98 (49 pairs - sum of numbers in each pair is 2). So the sum of numbers in the sequence is 100.

3. (a) 144.

(b) 127.

Solution: (a) 60, 90, 108, 120, 128.571428, 135, 140 are internal angle of equilateral triangle, square, regular pentagon, regular hexagon, regular heptagon, regular octagon, regular nonagon respectively. In this sequence the internal angle of decagon (n=10) is $(2n - 4)$ right angles/10 = $(2 \times 10 - 4) \times 90^0/10 = 16 \times 9 = 144^0$.

$$(b) \quad 2^2 - 1 = 3; \quad 2^3 - 1 = 7; \quad 2^4 - 1 = 15; \quad 2^5 - 1 = 31$$

$$2^6 - 1 = 63; \quad 2^7 - 1 = 127$$

4. 81000.

Solution: Let us assume that the total amount was x . First thief took $x/3$. Remaining part was $2x/3$. Second thief took one-third from that, which was $(2x/3)/3 = 2x/9$. Remaining part was $(2x/3 - 2x/9) = 4x/9$. Third thief took one-third of the remaining, which was $(4x/9)/3 = 4x/27$. Remaining part was $(4x/9 - 4x/27) = 8x/27$. This amount was equally shared by them to get $8x/81$ for each. So the ratio of the amounts taken by them was $[(x/3) + (8x/81)]:[(2x/9) + (8x/81)]:[(4x/27) + (8x/81)]$, which was $(35x/81):(26x/81):(20x/81)$, which was 35:26:20. So they earned in thousands, which means 35000, 26000 and 20000. So total amount was 81000.

5. The car can be stopped within safe distance.

Solution:

Initial velocity of car = 12.8 ft/sec.

In order to stop the car without hitting the pedestrian, it should come to rest.

Final velocity should be equal to 0 ft/sec.

Applied retardation = 16 ft/sec².

Distance between car and pedestrian = 6 yards = 18 ft.

Using the formula $v^2 - u^2 = 2as$

$$0^2 - (12.8)^2 = 2 \cdot (-16) \cdot s$$

$$-32s = -(12.8)(12.8)$$

$$s = 5.12 \text{ ft.}$$

So the car stops at a distance of 5.12ft. But the pedestrian is 18 ft away, which shows there is no danger to the pedestrian.

Salutation to your solution! - Winners:

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

Question Gallery! - We ourselves disclosing answers!!

1. The Yellow river (Huang Ho) is called 'Sorrow of China', because it floods often and takes so many lives.
2. The author of 'Alice in wonderland' is Lewis Carroll.
3. The river Danyub arises in Germany (Europe) and flows 2850 km (1775 miles) to the Black sea in Romania. It passes through cities like Belgrade, Budapest, Vietnam.
4. Mount Etna is a 3329 meter high active volcano. It is located in Italy.
5. The capital of Lebanon is Beirut.
6. Calorimeter is used to measure heat.
7. π radians is equal to 180°. So $90^\circ = \pi/2$ radians.
8. Symbol of Thorium is Th.
9. R.K. Narayan (October 10, 1906 - May 13, 2001) is known for being a Novelist, Short Story writer, and Memoirist.
10. Cosecant is the word used in Trigonometry. In a right angled triangle, if one of the angles is θ , then cosecant = Hypotenuse/ Side opposite to the angle θ .

Question Gallery! - Winners : 1. Ravi Bhagavatula, Chicago. 3.

2. Hargobind Vhora, St. Louis.
3. Sreekanth Gutala, St. Louis.
4. T. Anoop, East Godavari Dt.
5. Vaasanti Maghapu, California.