Vasant Valley School

Mathematics

Class 11 ABC

Instructions:

1. All 5 assignments are to be done in the Math Homework book
2. These will be graded towards July grades.
3. To be submitted on 8th July 2009.
4. Show working/ Explain where possible.
5. Either attach a printout of the questions or write out the question before solving.

Assignment 1

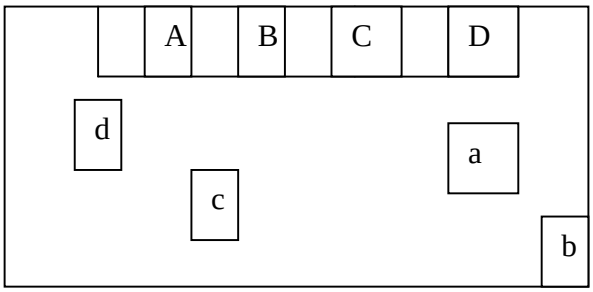
Two perfect logicians, S and P, are told that integers x and y have been chosen such that $1 < x < y$ and $x+y < 100$. S is given the value $x+y$ and P is given the value xy. They then have the following conversation.

P: I cannot determine the two numbers.
S: I knew that.
P: Now I can determine them.
S: So can I.

Given that the above statements are true, what are the two numbers?

Assignment 2

1. Draw a rectangle 4cm X 6 cm. Cut it into two identical parts that will fit perfectly to form a square.
2. Draw a path from each house A,B, C, D , to its garbage a,b,c,d so that no paths cross or go outside the fenced yard.



Assignment 3

Investigate Pascal's triangle. You may use your class 11 NCERT (Binomial theorem) as well as visit sites like mathforum.org / mathisfun.com. You may elaborate on the following-

a) How is it formed?
b) Historical notes.
c) 5 Obvious observable patterns .

Assignment 4

Cut out 2 Sudokus from the Newspaper. Solve and paste in your book.

Assignment 5

Solve the following speed Math Questions (this should take you 10 minutes)

1. An arrow is formed in a 2 ×2 square by joining the bottom corners to the midpoint of the top edge and the centre of the square.

Find the area of the arrow.

2. If @ is defined for all positive numbers a and b by a @ b = $2ab - b^2$, then 5 @ 2 = _____

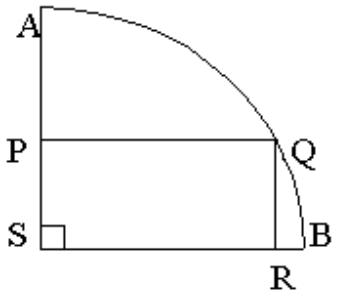
3. The vertices of rectangle ABCD are A(-1,0), B(2,0), C(s, *t*), and D(-1,4). How long is diagonal AC? _____

4. What is the average (arithmetic mean) of all the multiples of ten from 10 to 190 inclusive?

5 .If the product of 6 integers is negative, at most how many of the integers can be negative?. _____

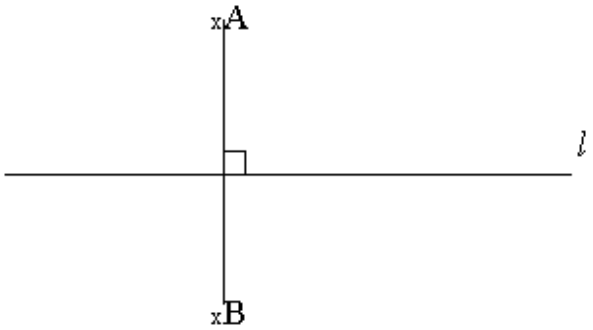
6. How many numbers between 200 and 400 begin or end with 3 ? _____

7. ASB is a quarter circle. PQRS is a rectangle with sides PQ = 8 and PS = 6. What is the length of the arc AQB ?



8. The number of degrees that the hour hand of a clock moves through between noon and 2.30 in the afternoon of the same day is _____

9.



A and B are equidistant from the line l. How many circles can be drawn with their centres on line l and that pass through both A and B?

10. The price of a cycle is reduced by 25 per cent. The new price is reduced by a further 20 per cent. The two reductions together are equal to a single reduction of _____