Preliminary test

Example

Math

If α is a positive real number, then 2+log10(0.01+α)

a. is positive

b. is equal to 0

c. is negative

d. it is impossibile to say without knowing the value of α

The equation 6*x*–1=0

a. is never true

b. none of the choices listed

c. is true for x=0

d. is true for x=1

The line of the equation –3*y*–*x*–1=0

a. passes through the origin of the coordinates

b. has a positive intercept on the y-axis

c. is not the equation of a line

d. has a negative intercept on the y-axis

$9t - 6 \leq 9t - 2$

a. is an inequality for some values of *t* but not for others

b. is not a first degree inequality

c. is a first degree inequality that is always true

d. is a first degree inequality that is never true;

Logic

40% of the students from a certain school are blond. Of these, 30% are smokers. Compared to all students in the school, the percentage of blond students who do not smoke is:

a. 28%

b. 12%

c. 120%

d. 10%

Giovanna and Mario played the following game. Giovanna flipped a coin a number of times. Every time heads came out Giovanna gave 8 Euros to Mario, while every time tails came out Mario gave 8 Euros to Giovanna. Before starting to play Giovanna had 80 Euros, and Mario had 24 Euros. Which of the following is definitely not the case?

a. when the game ended Giovanna had less money than Mario

b. in a few moments of the game Mario had exactly 8 Euros

c. when the game ended Giovanna ran out of money

d. in a few moments of the game Giovanna and Mario had the same amount of money

Let a be a positive integer. The product $a \cdot (a+1) \cdot (a+2)$

a. is a prime number for some values of a

b. is a multiple of six whatever the value of a

c. is a multiple of four whatever the value of a

d. is not a multiple of three for some values of a

Aristide has 6 cats. Of these, 4 are female, 3 are black, 2 are white. How many white female cats does Aristide have?

a. Two

b. It is impossible to say

c. None

d. One