Sarajevo School of Science and Technology

Sarajevo, April 2014.

Entrance Exam

M A T H E M A T I C S (ECON)

Name:

Problem 1:

If the sales tax on a $30.00 item is $1.90, what is the sales tax rate?

Problem 2:

If the price of a computer was decreased from $1,000 to $650, by what percent was the price decreased?

Problem 3:

Mark traveled for 3 hours at a rate of 75 kilometers per hour and for 6 hours at a rate of 65 kilometers per hour. What was his average speed for the 9-hour period?

Problem 4.

A special lottery is to be held to select the student who will live in the only deluxe room in a dormitory. There are 200 seniors, 300 juniors, and 400 sophomores who applied. Each senior's name is placed in the lottery 6 times; each junior's name, 4 times; and each sophomore's name, 2 times. If a student's name is chosen at random from the names in the lottery, what is the probability that a senior's name will be chosen?

Problem 5.

NOONTIME TEMPERATURES IN HILO, HAWAII

Mon.	Tue.	Wed.	Thu.	Fri.	Sat.	Sun.
33	39	32	34	39	38	35

The table above shows the temperatures at noon, in degrees Fahrenheit, in a city in Hawaii over a one-week period. If m represents the median of these temperatures, f represents the temperature that occurred most often, and a represents the average (arithmetic mean) of these seven temperatures, which of the following is the correct order of *m, f,* and *a* ?

(A) a < m < f

(B) a <f< m

(C) m <a< f

(D) m <f< a

E) a = m < f

Problem 6.

The projected sales volume of a video game cartridge is given by the function s (p) = 3000/ 2p+a , where s is the number of cartridges sold, in thousands; p is the price per cartridge, in dollars; and a is a constant. If according to the projections, 200,000 cartridges are sold at $5 per cartridge, how many cartridges will be sold at $10 per cartridge?

Problem 7.

If k is divisible by 4, 6, and 30, which of the following is also divisible by these numbers?

(A) k + 5

(B) k + 15

(C) k + 20

(D) k + 30

(E) k + 45

Problem 8

The mean of 4, 6, 10, 14, and 26 is equal to?

Problem 9

If a jar contains 26 red marbles and 14 green marbles, the probability that a marble selected from the jar at random will be green is ?