**Revision paper in math:**

1. Solve the simultaneous equations and eigenvalues problem for the matrix.

4x – 7y = 7

-3x + 8y = 3

2. Find the absolute value of each number. a. -8 b. 4 c. -0.1262 d. -59.373

3. Solve each of these inequalities.

a.|x – 4| < 6 b. *x*2 + 4*x* 5 c.|x| < |3 – 2x| d.|2x - 4|-|x| ≤ 3

4. Find inverse functions to each of these functions.

a. x b. x + 1 c. 2x d. x2

5. For each function write: even or odd, or none.

a. x b. - x + 1 c. x2 d. sin(x) e. cos(x) f. tan(x) g. x3 L. 7

6.1. Explain math models in biology, least squares fit, exponential growth and logistic growth models.

6.2. (a) Two populations start from the same number of organisms. One population grows at the rate of 10% per year and the other – 5% per half year. Which of the populations grows faster? (b) If the rates are the rates of reduction the population, which of the populations is reduced faster?

7. Perform the linear least squares fitting of these points (0, 0), (1, 0) and (0, 1).

8. Find these limits. a. b. c.

f. g. h. i. j.

9. Tick the functions continuous for all x.

A. tan(x) B. sin(x) C. Ln(x) D. 3x E. x2 F. |x|

10. Explain your math project.