**10 task in math:**

1. Solve the simultaneous equations using all methods you know.

x + y = 3

x – y = 1

2. Find the absolute value of each number.

a. -8

b. 4

c. -0.1262

d. -59.373

e. 3489790.3901

3. Solve each of these inequalities.

a. – x < 1

b. |x| > 3

c. |x – 4| < 6

d. |5x + 7| > 8

e. x2 > y, 0 < x < 1

f. x3 < y < x2

4. Prove that the lines y = sx + i and y = gx + I are perpendicular if sg = -1.

5. Write equations of two lines parallel to the line y = 3x + 2. Write the equation of the parallel line passing through the point (12, 14).

6. Define transcendental functions.

7. If your homework score is reduced 10% for each day of the delay, in how many days will your score be halved?

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

a. y = x

b. y = - x + 1

c. y = x2

d. y = sin(x)

e. y = cos(x)

f. y = tan(x)

g. y = x3

h.. y = x2 + x3

i. y = sin(x) + cos(x)

j. y = tan(x) + sin(x)

k. y = cot(x) + sin(x)

L. y = 7

9. Graph these functions.

a. y = x3

b. y = -x2

c. y = sin x

d.

e. x2

f. y = x-1

10. Define a function, a continuous function and a limit.

11. Work out these limits.

a.

b.= . . .

c. = . . .

d. = . . .

e.. . .

12. Tick continuous functions.

A. y = tan(x)

B. y = sin(x)

C. y = Ln(x)

D. y = 3x

E. y = x2

F. y = |x|

13. Find inverse functions to each of these functions.

a. y = x

b. y = x + 1

c. y = 2x

d. y = x2

14. Perform the linear least squares fitting of these points (0, 0), (1, 0) and (0, 1). Use the fitting line in the form y(x) = gx + i.

For any 3 points (x1,y1), (x2,y2), (x3,y3), which are not on the same straight line,

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Write the expressions for any number of points (n).

15. Describe your math project.

**Deadline: 17 December 2014**