MATERIAL : Number Systems, Fibonacci, Pascal, Vertices, Edges, Faces, Angles, Polygons (NO Calculators)

Sample Questions.

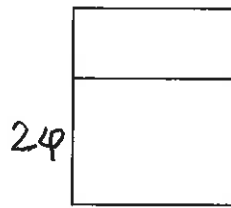1. Give the following (a) $1+2+3+4+...+999$ (b) $5+6+7+8+9+...+2005$ (c) $2+4+6+8+10+...+1000$ (d) $5+9+13+17+...+405$ (e) $1+3+6+10+15+21$

2. Write the following as an expression with no exponents on φ. (a) $1+3\varphi+\phi^2$ (b) $(1+\phi)^2$ (c) $1+\varphi+\phi^2+\varphi^3$

3. Determine b so that the following rectangles are golden.
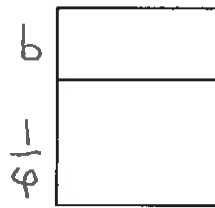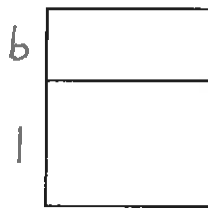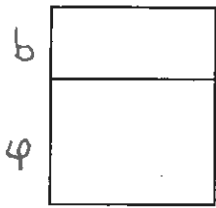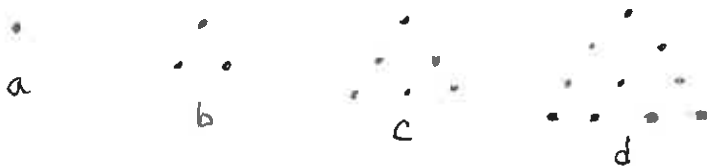

4. Give the length of the diagonal of the following. (a) A square of area 5.
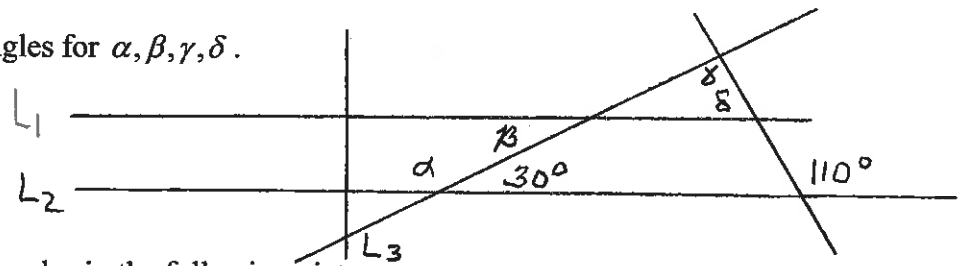
(b)
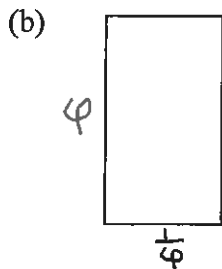
(c) Golden Rectangle

5. What is 11^8? What rational number is close to $\sqrt{5}$?

6. Show using rectangles whether the following is true or not: $(a+b)^2 = a^2 + 2ab + b^2$

7. Determine a pattern for the following sets of vertices and give the number of vertices, largest number possible of edges and faces.
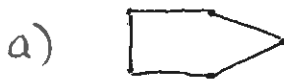

8. Give the value of the angles for $\alpha, \beta, \gamma, \delta$.

$L_1 \parallel L_2$

$L_1 \perp L_3$

9. Give the sum of all the angles in the following pictures.

a)   b)   c)

10. Give a formula for the area of an isosceles triangle with side lengths a and b.