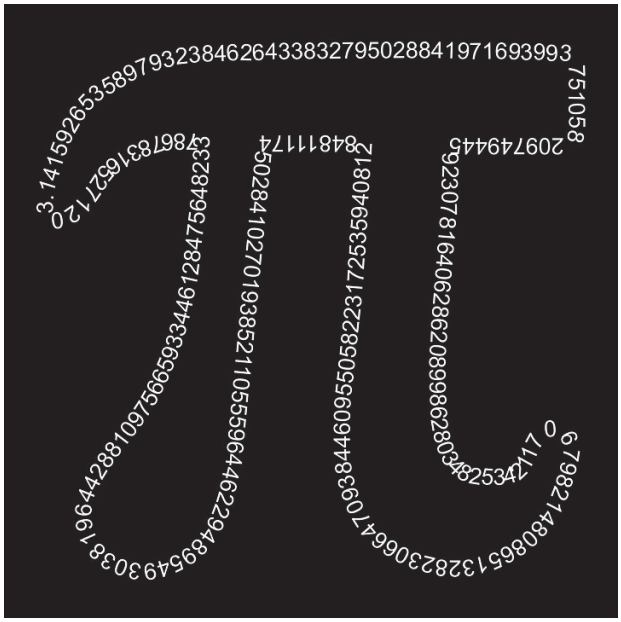
MATHS BASIC COURSE FOR UNDERGRADUATES



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STATEMENTS: <u>2nd. SUBJECT. COMPLEX NUMBERS</u>

Exercise 1. *Write in polar form the following complex numbers:*

$$5i, 1+i \text{ and} -1-i.$$

Exercise 2. *Operate the following expressions:* $(3_{\pi/3})^3$ *and* $\frac{2_{\pi/3}}{\sqrt{5}_{\pi/4}}$.

Exercise 3. *Calculate* $(-\sqrt{3}+i)^7$.

Exercise 4. *Find the expression* $\cos(3\theta)$ *as a function of* $\cos\theta$.

Exercise 5. *Give the* 4*-th and the* 6*-th roots of the unity.*

Exercise 6. *Solve the equation* $z^5 = -\sqrt{3}+i$.