MATHS BASIC COURSE FOR UNDERGRADUATES

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STATEMENTS: <u>4th SUBJECT. DIVISIBILITY</u>

Exercise 1. *Prove that the square of any integer number a is of type $3k$ or $3k+1$ for some k integer number, i.e. that the division of a^2 by 3 has as remainder 0 or 1.*

Exercise 2. *Change the number $(3043)_5$ from the base 5 to the base 10.*

Exercise 3. *Change the number 1025 from the decimal form (base 10) to the base 7.*

Exercise 4. *Change the number 3027 from the decimal form (base 10) to the base 16.*

Exercise 5. *Calculate the greatest common divisor of 12 and 18 ($gcd(12,18)$), using the definition of it.*

Exercise 6. *Calculate the $gcd(1479,272)$ and express it as a combination of the numbers 1479 and 272.*