1.6 DIVIDING POLYNOMIALS AND REMAINDER THEOREM

e.g.1: DIVIDE 1 436 by 12

DIVIDEND = DIVISOR x QUOTIENT + REMAINDER

e.g.2: Divide $(3x^3-5x^2-7x-1) \div (x-3)$

e.g.3: Determine the remainder of $(9x+4x^3+12) \div (2x+1)$

THE REMAINDER THEOREM
When a polynomial function P(x) is divided by x-b, the remainder is P(b)
When a polynomial function P(x) is divided by ax-b, the remainder is P(a/b),
$a,b \in I$, $a \neq 0$

e.g.4: Determine the value of k such that when $3x^4+kx^3-7x-10$ is divided by $x-2$, the remainder is 8.