

(1)[5 points] Find k if $(2, 0)$ is an x -intercept of the graph of $f(x) = kx^5 - x^2 + 5x + 8$.

(2)[5 points] Use long division to find the quotient $q(x)$ and remainder $r(x)$ if $f(x) = 27x^3 + x - 2$ is divided by $d(x) = 3x^2 - x$.

(3)[5 points] Find the remainder if $f(x) = x^4 - x^3 + 2x^2 + 3x - 5$ is divided by $x - 3$.