function iterationValues = NewtonRaphson(polynomialCoefficients, startingPoint, tolerance)

if length(polynomialCoefficients) <= 2

throw(MException('NewtonRaphson:PolynomialDegreeTooLow', 'The degree of the polynomial must be 2 or larger'));

end

firstOrderDerivativePolynomialCoefficients = PolynomialDifferentiation(polynomialCoefficients, 1);

secondOrderDerivativePolynomialCoefficients = PolynomialDifferentiation(polynomialCoefficients, 2);

iterationValues(1) = startingPoint;

i = 1;

while true

prevX = iterationValues(i);

nextX = NewtonRaphsonStep(prevX, firstOrderDerivativePolynomialCoefficients, secondOrderDerivativePolynomialCoefficients);

iterationValues(i+1) = nextX;

if abs(prevX - nextX) < tolerance

break;

end

i = i + 1;

end

end