Assignment (1) for Numerical Analysis

1)	The polynomial has the roots: 2 of multiplicity 1, -1 of multiplicity 3 and 0 of multiplicity 2 is:			
	A	$P(x) = -2x^2(-x-1)^3(-x+2)$	B	$P(x) = -2x^2(-x-1)^3(-x-2)$
	C	$P(x) = -2x^2(-x+1)^3(-x+2)$	D	$P(x) = -2x^2(-x+1)^3(-x-2)$
2)	Let $f(x) = \sin(\pi x)$ on $[a, b]$. When −1 < a < 0 and 2 < b < 3, the Bisection method converges to 2 if:			
	A	a + b > 2	B	a + b < 2
	C	a + b = 2	D	a + b =0
3)	Let $f(x) = (x-1)^{10}, P = 1, P_n = 1 + \frac{2}{n}$. Then the minimum number of iterations needed to achieve $\lvert P - P_n \rvert < 10^{-3}$ equal:			
	A)	2000	B	2001
	C)	1000	D	1001
4)	Let A be a given positive constant and $g(x) = 3x - Ax^2$. An interval for which fixed-point iteration converges, provided P_0 is in that interval:			
	A	$\left[\frac{1}{2A}, \frac{2}{3A}\right]$	B	$\left[\frac{1}{A}, \frac{2}{A}\right]$
	C	$\left[\frac{1}{A}, \frac{3}{A}\right]$	D	$\left[\frac{1}{3A}, \frac{2}{A}\right]$
5)	Let $f(x) = 3^{3x+1} - 7 \cdot 5^{2x}$. If Newton's method is used to find the zero of the function with $P_0 = 11$, then P_2=			
	A	11.009438040155250	B	11.009738040155250
	C	11.009438935966259	D	11.009738935966259