

Newton's Method (round all answers to at least 9 decimals). If the function is not already set equal to zero, set it equal to zero and find the roots of the new equation. For 6-8, write a simple function that has that value as its solution and then find the root of the equation using Newton's Method for approximating roots.

1. Solve: $x^3 + 3x = -1$

2. Solve: $\sin x + x^2 = 3$ on $[1,2]$

3. Solve on $[0, \pi)$: $\tan x = e$

4. Solve: $x^4 + x^3 - 5x^2 - 7 = 0$ on $[2,3]$

5. Solve on $[2,3]$: $\sin x - \sin 2x = 2 + \cos x$

6. Approximate $\sqrt[5]{2}$

7. Approximate $\sqrt[4]{8}$

8. Approximate $\sqrt[3]{7}$