

Let $f(x) = x^4 - 2x^3 - 5x^2 + 12x - \pi$

1. Find the critical points of f by hand *Hint:* One is $x = 1$
2. On which intervals is f increasing? decreasing?
3. Find the inflection points of f
4. On which intervals is f concave up? concave down?
5. Sketch a graph of $y = f(x)$
6. Verify your graph by using technology