Lab – Using Derivatives to graph functions

1. For the graphs A-B below,
2. Find the values of x where f’ and f’’ are equal to zero.
3. Create a numberline with the signs of f’ and f’’ clearly indicating the precise values of x where these are zero.
4. Find the values of *x* where there are pts of inflection, local maxima and local minima



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1. For the numberlines A-B below, draw the graph of *f* on the interval labeling the x values of the local maxima, local minima and pts of inflection.



1. For the functions A-D below,
2. Find the formula of f’ and f’’.
3. Find the values of x where f’ and f’’ are equal to zero.
4. Create a numberline with the signs of f’ and f’’ as done in class
5. Find the points of inflection, local maxima and minima
6. Draw the graph of *f* on the interval labeling max/min/pts of inflection. (feel free to check with Desmos)
7. $f\left(x\right)=x^{3}+6x^{2}+9x+1$ on the interval [-4, 1]
8. $f\left(x\right)=\frac{x^{3}}{3}-4x+1$ on the interval [-3, 3]
9. $f\left(x\right)=\frac{x^{4}}{2}-x^{2}+1$ on [-3,3]
10. $f\left(x\right)=\cos(\left(x\right))-sin(x)$ on [0,2pi]