

Due date: _____**Name:** _____

1. Find the intervals of concavity and inflection point(s) of $f(x) = x^4 + x^3 - 3x^2 + 1$.

2. Find the intervals of concavity and inflection point(s) of $f(x) = \frac{1}{4-x^2}$.

3. Find the intervals of concavity and inflection point(s) of $f(x) = x^2 e^x$.

4. Find the intervals of concavity and inflection point(s) of $f(x) = \sqrt[3]{x^2 + 1}$.

5. Find the intervals of concavity and inflection point(s) of $f(x) = \frac{\ln x}{x}$.

6. Find the intervals of concavity and inflection point(s) of $f(x) = \cos x - \sin x$ in the interval $[0, 2\pi]$.

7. Find the intervals of concavity and inflection point(s) of $f(x) = 6x^{1/3} + 3x^{4/3}$.

8. Find all points where $f(x) = 2x^3 + 3x^2 - 12x - 7$ has a local maximum and local minimum using the Second Derivative Test.

9. Find all points where $f(x) = 2x + 1 + \frac{2}{x}$ has a local maximum and local minimum using the Second Derivative Test.

10. Find all points where $f(x) = x^3 \ln x$ has a local maximum and local minimum using the Second Derivative Test.

Q: Why couldn't the angle get a loan?

Optional exercises from the Stewart textbook if you'd like more practice:

4.3 (p.300) #9-17 odd (part c only), 37-47 (part c only)