

Math 119 2020-1 Recitation Week 08

1. Sketch the graphs of the following functions:

(a) $f(x) = 2x^{5/3} - 5x^{4/3}$.

(b) $f(x) = \frac{x^2 - 2x + 2}{x - 1}$

(c) $f(x) = \frac{x}{\ln x}$

(d) **(exercise)** $f(x) = \frac{3x^2 + 1}{x^2 - 1}$.

(e) **(exercise)** $f(x) = x^2 \ln x$.

2. **(exercise)** Find all intervals where f is concave up and concave down. Also, find all inflection points of f .

(a) $f(x) = x^2 \ln x$

(b) $f(x) = x^3 - 6x^2 + 12x + 4$

3. **(exercise)** Find all asymptotes of the following functions:

(a) $f(x) = \frac{x^3 + x + 1}{x^2 + 1}$

(b) $y = \frac{x}{x^2 - 4x + 3}$

(c) $f(x) = \frac{1}{e^x - 1}$

(d) $f(x) = \frac{\sin x}{x}$