

Math 141 - Homework 10

Name: _____

Find the intervals where the following functions are increasing and where they are decreasing. Note the locations of any local max or mins.

1. $f(x) = 2x^3 - 3x^2 - 12x$

2. $g(x) = \frac{1}{x^3} - \frac{3}{x}$

3. $f(\theta) = \theta + \cos \theta$ for $0 \leq \theta \leq 2\pi$.

4. $h(x) = (x^2 - 4)^3$.

5. $y = x^{1/3}(x + 2)$.

6. $f(x) = \frac{x}{x^2 + 9}$.

Find the intervals where the following functions are concave up and where they are concave down. Indicate the locations of any inflection points.

7. $y = 2x^3 - 3x^2 - 12x$.

8. $h(x) = \frac{x^3 + 8}{x}$.

9. $f(x) = \cos 2x$ on $[0, 2\pi]$.

10. $y = x^2 + \sqrt{x}$.