

Name: \_\_\_\_\_

Increasing, Decreasing and Concavity WS

Directions: Find the intervals where the function is **a)** increasing and decreasing, **b)** concave up and concave down, and **c)** determine the x-coordinate of all the inflection points

$$1) f(x) = 4x^3 - 12x^2$$

$$2) f(x) = \frac{e^{2x}}{2} - x$$

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

$$4) f(x) = 2\cos x + x \text{ on } [-\pi, \pi]$$

$$5) f(x) = \sin x - \sqrt{3}\cos x \text{ on } [0, 2\pi]$$