

MTH 1126 Test #3

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Name _____

Instructions. Show CLEARLY how you arrive at your answers.

1. Compute: $\frac{d}{dx} [\ln(\sin(x))] =$

2. Compute: $\frac{d}{dx} \left[\ln \left(\frac{x^2+1}{3x^2-5x+4} \right) \right] =$

3. Compute: $\int \frac{x^2-2}{x^3-6x} dx =$

4. Use the facts that $\ln(6) \approx 1.8$ and $\ln(5) \approx 1.6$ to approximate the following:

(a) $\ln(30) \approx$

(b) $\ln(125) \approx$

(c) $\ln(1.2) \approx$

5. A crane is raising a wrecking ball from ground level to a height of 50 ft. The wrecking ball weighs 200 lb. and the cable weighs 2 lb per foot length. How much work is done in raising the wrecking ball?