Math 181 Quiz 9 Version A

1. Find the following derivatives:

(i) $\dfrac{d}{dx}\ln 2$

(ii) $\dfrac{d}{dx}\sin(2x+7)$

(iii) $\dfrac{d}{dx}\dfrac{x^2}{1+x^2}$

(iv) $\dfrac{d}{dx}|x^3|$

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2. Find $\int_1^5 x\sqrt{x-1}\,dx$

3. State the mean value theorem for derivatives.

4. Use the mean value theorem for derivatives to show the following:

If $f'(x) = g'(x)$ for every x between a and b, then there is a constant C such that $f(x) = g(x) + C$ for every x between a and b.