

Math 181 Honors Quiz 10 Version A

1. Find the following sums:

$$(i) \sum_{k=1}^7 k$$

$$(ii) \sum_{k=5}^{10} (k + 3)$$

$$(iii) \sum_{k=n}^{n+14} k$$

$$(iv) \sum_{k=1}^n (k - 1)^2$$

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2. Find the following limits, derivatives and indefinite integrals:

(i) $\frac{d}{dx} \left\{ \arcsin(x) - \sqrt{1-x^2} \right\}$

(ii) $\int \frac{x}{1+x^2} dx$

(iii) $\int \sin x \cos x dx$

(iv) $\lim_{x \rightarrow 0} \frac{\sin 5x}{3x}$