

Math 181 Quiz 1 Version A

1. Answer the following True or False questions:

(i) The repeating decimal $1.\bar{9}$ is slightly smaller than 2.

(A) True

(B) False

(ii) For every real value of x it holds that $1 - \sin^2 x = \cos^2 x$.

(A) True

(B) False

2. Convert the repeating decimal $2.\bar{5}$ into an improper fraction.

3. Explain why $\sqrt{xy} \leq \frac{x+y}{2}$ for x and y positive.

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4. Solve the quadratic equation $x^2 - x - 6 = 0$.

5. Find all values of x which satisfy the inequality $x^2 > \frac{1}{x}$.

6. State and prove the Pythagorean theorem.

7. [Extra credit] In which state is the Courant Institute of Mathematical Sciences?