

Math 181 Honors Quiz 2 Version A

1. Convert the fraction $\frac{2}{7}$ to a repeating decimal.
2. Convert the repeating decimal $1.\overline{36}$ to a fraction.
3. Find the x which satisfy $|x - 3| \leq 4$ and sketch the solution on a number line.
4. Write the arithmetic–geometric mean inequality for 1, 1, x to show $x^{1/3} \leq (x+2)/3$.

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5. Prove one of the following theorems:

The Squeeze Theorem. *Suppose that for all $n > N$,*

$$a_n \leq b_n \leq c_n,$$

and that $\lim_{n \rightarrow \infty} a_n = \lim_{n \rightarrow \infty} c_n = a$. Then $\lim_{n \rightarrow \infty} b_n = a$.

Irrationality of $\sqrt{2}$. *There is no fraction p/q where p and q are integers such that $(p/q)^2 = 2$.*