Quiz #4 Solutions

Math 55 with Professor Stankova
Discussion Section #108 with GSI James Moody

Wednesday, the 21st of September 2016
Write your name at the top!

Question 1 [12 points] Compute $\sum_{i=0}^{2}\sum_{j=1}^{3} ij$, and write your answer as a natural number in base ten (not as a fraction).

$$\begin{aligned}
\sum_{i=0}^{2}\sum_{j=1}^{3} ij &= \sum_{i=0}^{2}\left(i\sum_{j=1}^{3} j\right) \\
&= \sum_{i=0}^{2} i\frac{3(3+1)}{2} \\
&= \frac{12}{2}\sum_{i=0}^{2} i \\
&= 6 * \frac{2(2+1)}{2} \\
&= 6 * 3 \\
&= 18
\end{aligned}$$

Question 2 [± 1 **point**] The real intervals $(0, 1)$ and $(-1, 1)$ have the same cardinality.

True —or— False?

Question 3 [± 1 **point**] The set of even natural numbers has the same cardinality as the set of odd natural numbers.

True —or— False?

Question 4 [± 1 **point**] If there is an injective map $f : A \to B$, then $|A| = |B|$.

True —or— **False**?