

Math 220 – Homework 11

Due Thursday 4/18 at the beginning of class

Total points: 138

PART A

Problems from the textbook:

• Section 5.5	problem	1	2	4*	5(b)	6(a)*	6(b)	10*
	points	24	16	10	10	10	10	10

PART B

- Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = 2019 - 3x$.
 - * [10 points] Compute $f([-3, 3])$. (Give a formal proof.)
 - * [10 points] Compute $f^{-1}([-3, 3])$. (Give a formal proof.)
- Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined by $f(x) = x^6$.
 - * [10 points] Compute $f([0, 2])$. (Give a formal proof.)
 - * [8 points] Compute $f([-1, 0])$. (Give a formal proof.)
- * [10 points] For a function $f : X \rightarrow Y$ and subsets B_1 and B_2 of Y , prove that

$$f^{-1}(B_1 - B_2) = f^{-1}(B_1) - f^{-1}(B_2)$$