MATH 287 HOMEWORK 1

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Exercise 1. Proposition 1.11(vi). If m, n, p, and q are integers, then

$(m(n+p))q = (mn)q + m(pq)$.

Proof. Let $m, n, p, q \in Z$. We will use axioms related to multiplication to show that $(m(n+p))q = (mn)q + m(pq)$:

$$(m(n+p))q = (m(n+p))q$$

(Axiom 1.1.3) $$= (mn+mp)q$$

(Axiom 1.1.3) $$= mnq + mpq$$

(Axiom 1.1.5) $$= (mn)q + m(pq).$$

□

Exercise 2. Proposition 1.22(i). For all $m \in \mathbf{Z}$, $-(-m) = m$.

Proof. -enter your proof here- $\square$