

Class handout

Number Sets:

Natural	N	Closed under operation + and x (multiplication)
Whole	W	Adds Identity element
Integers	Z (<i>Zahlen</i> (German for numbers, pronounced ['tsa:lən]))	Adds more numbers, so that Z is closed under operation -
Rational	Q (Quotient)	Adds even more numbers, so that Q is closed under operation \div , excluding 0 (zero)

Operation/ Set	Natural (N)	Whole (W)	Integer (Z)	Rational (Q)
+				
-				
*				
\div				

Identity element e for operation \square is that $e \square a = a$.

Set **N** is closed on operation + because for any element $N1$ and $N2$, $N1 + N2 = N3$, $N3 \in \mathbf{N}$