

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

DEPARTMENT OF MATHEMATICS AND STATISTICS

SECTION 1.1

Math 1090 Worksheet

FALL 2026

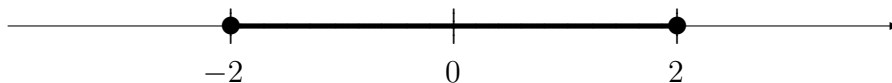
SOLUTIONS

1. (a) Observing that $\sqrt{4} = 2$, the only natural number in the set is $\sqrt{4}$.
 - (b) The integers in the set are $0, \sqrt{4}, -5, -102$.
 - (c) The rational numbers in the set are $0, \sqrt{4}, -5, -102, \frac{8}{3}, 7.45, -\frac{1}{4}$.
 - (d) The irrational numbers in the set are $\frac{\pi}{2}, \sqrt{3}$.
2. (a) The inequality in set B is strict, which is not the case in set A . This means that $2 \in A$ but $2 \notin B$. Otherwise, the two sets are identical.
 - (b) Set A consists of *all* real numbers less than or equal to 2. Set C consists only of the integers less than or equal to 2, which means that we can write

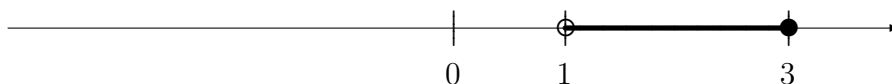
$$C = \{2, 1, 0, -1, -2, -3, \dots\}.$$

As a result, there are many rational and irrational numbers which are members of A but are not members of C . For instance, $\frac{1}{2} \in A$ but $\frac{1}{2} \notin C$.

3. (a) This is equivalent to the interval $[-2, 2]$. It can be represented by

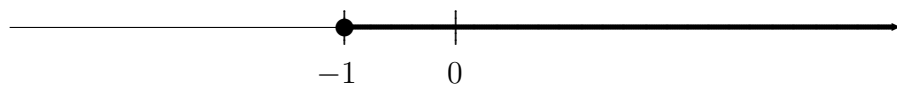


- (b) This is equivalent to the interval $(1, 3]$. It can be represented by



- (c) This is equivalent to the interval $[-1, \infty)$. It can be represented by

–2–



(d) This is equivalent to the union of intervals $(-\infty, 0] \cup (\frac{2}{3}, 3)$. It can be represented by

