Homework 5 Solutions

MTH 327H

4. The interior of $A$ is $\text{int } A = A$, since $A = S \cap ((.5, 2) \times (2, 2.3))$ is already open in $S$. All of the limit points of $A$ in $\mathbb{R}^2$ are also contained in $S$, so we see $\overline{A}$ is the closed rectangle $[.5, 1] \times [2, 2.3]$. The interior of $B$ is empty (every point is isolated) and the closure is $\overline{B} = B$ because the only limit point of $B$ in $\mathbb{R}^2$, namely $(0, 2)$, is not an element of $S$. 