Com Sci 180: Homework #2
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Problem 6

Part A
1] Evaluate the integrals $\int_0^1 (1 - x^2)\mathrm{d}x$ and $\int_1^\infty \frac{1}{x^2}\mathrm{d}x$.

Solution

$$
\begin{aligned}
n^2 - n + 1 &= \\
&\leq n^2 \\
&\leq c \cdot n^2/2
\end{aligned}
$$

Problem 6

Write part of **Quick-Sort**($list, start, end$)

```
1: function QUICK-SORT(list, start, end)
2:      if start ≥ end then
3:          return
4:      end if
5:      mid ← PARTITION(list, start, end)
6:      QUICK-SORT(list, start, mid − 1)
7:      QUICK-SORT(list, mid + 1, end)
8: end function
```

Algorithm 1: Start of QuickSort