Written Homework

Your carefully written solutions to the following questions will be due at the beginning of class on Monday, December 1.

1. The data in the following table indicates the rate at which crude oil was produced in the U.S. in several years. Use Simpson’s rule to estimate the total amount of crude oil that was produced during that span of time. (Note: The rates in the table are measured per day, but the time units here are years. You will need to convert all your units before you can proceed.)

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thousands of Barrels per Day</td>
<td>5,681</td>
<td>5,419</td>
<td>5,178</td>
<td>5,102</td>
<td>5,064</td>
</tr>
</tbody>
</table>

(Source: http://www.eia.doe.gov/basics/quickoil.html)

2. Solve the initial-value problem

\[
\frac{dy}{dt} = k(2 - y), \quad y(0) = 1.
\]

3. Solve the initial-value problem

\[
y' = 4 - y^2, \quad y(0) = -1.
\]
Daily Practice Problems

You should do the suggested reading below and attempt these exercises after class each day. You will not submit solutions to these questions for grading, but you may use them as notes during the weekly quizzes.

After class on **Monday, November 24**, read Section 5.9 and work the following exercises:
Section 5.9, # 25, 27, 29

After class on **Tuesday, November 25**, read Section 7.1 and work the following exercises:
Section 7.1, # 1, 3, 5, 9

After class on **Wednesday, November 26**, read Section 7.3 (upto page 515) and work the following exercises:
Section 7.3, # 3, 9, 13, 15