Freshman Engineering Seminar Homework 4: Engineering Problem Solving

This assignment will be due at the start of class on Wednesday, 7 October 2015 – Review the Homework Guidelines

*1) The cells in a computer spreadsheet program are as shown.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>-1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>A3 + C1</td>
<td>-3</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>0.5</td>
<td>m</td>
<td>33</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Smith</td>
<td>1</td>
<td>B2*B3</td>
<td>C4</td>
</tr>
</tbody>
</table>

Instructions in macro-commands are scanned from left to right. What is the value of n in the following macro-commands?

\[ \begin{align*}
  m &= 5 \\
  p &= m * 2 + 6 \\
  n &= D4 - 3 * p * 0.5
\end{align*} \]

@2) A swimming pool with a square base is to be filled with a water truck with a 2,500 U.S. gallon tank. If the width of the pool is 6.75 m and its fill depth is 6.50 feet. How many trips will the truck make?

@3) A swimming pool with a rectangular base is to be filled with a water truck with a 12,475 U.S. gallon tank. If the length of the pool is 43.25 decimeters, width of the pool is 15.25 feet and its fill depth is 4.5 m. How many trips will the truck make?

%4) What is the distance between points (2, 3) and (5, 7)?

@5) A square wood block has a mass of 56 slugs and a density of 2.54 g/cm\(^3\).

a) What are the dimensions of the block, if the depth is 10 in?
b) What is the mass of the block in kilograms?

@6) What is the weight of a 165 lbm (pound mass) astronaut in Newtons (N) on the moon, where the acceleration due to gravity (g) is 5.30 ft/s\(^2\)?

$7) What is Specific Weight of liquid H\(_2\)O at 42.25°C (SI Units)?

$8) What is the Density of liquid H\(_2\)O at 73.5°F (English Units)?

$9) What is the Absolute Dynamic Viscosity of liquid H\(_2\)O at 133.75°F (English Units)?

$10) What is the Vapor Pressure of liquid H\(_2\)O at 52.5°C (SI Units)?
Homework Guidelines

Write **NEATLY in pencil on Engineering Paper**

Use a straight edge or ruler for your sketches or drawings

Follow the Problem Solving format discussed in class

Show Your Work

Cite your sources