Note that **ALL** angles on this quiz are in radians. If a question asks for the measure of an angle then it should be given in radians; angles in degrees will be marked incorrect. Make sure that your calculator is in radian mode. As a test, use your calculator to compute \( \cos(\pi) \). If your calculator is in radian mode then you should get \(-1\). If you get 0.998 then your calculator is still in degree mode.

1. (4pt) Fill in the table below. Be sure to simplify your answers but do not round (several of them will likely be fractions containing \( \pi \)). In case it is unclear, each column is meant to contain the same angle measured in both degrees and in radians.

<table>
<thead>
<tr>
<th>Degrees:</th>
<th>30°</th>
<th>315°</th>
<th>85°</th>
<th>1°</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Radians:</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>( \frac{5\pi}{3} )</td>
<td>(-\frac{\pi}{4} )</td>
<td>( \frac{11\pi}{20} )</td>
</tr>
</tbody>
</table>

2. (4pt) A ladder of length 10 m is leaning against the side of a building so that it makes an angle of \( \frac{2\pi}{3} \) with the ground. How far up on the wall does the ladder touch the building? Round to two decimal places.

3. (4pt) Find an acute angle \( \theta \) such that \( 7 \sin(\theta) - 4 = 1 \). Round to two decimal places.
4. (2pt) The circle below has a radius of 12. Find the value of $S$. Round to two decimal places.

![Circle Diagram]

5. (6pt) Find the value of $\ell$ in the triangle below. Round to two decimal places.

![Triangle Diagram]