Assignment 5

1. The following is a table of values for a linear function relationship.

<table>
<thead>
<tr>
<th>x</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>11</td>
</tr>
</tbody>
</table>

(a) Write the equation of the line in slope-intercept form.

(b) Identify the slope and the y-intercept.

(c) Graph the line.

2. A company is considering two options for its new headquarters.

(a) Option A: Build it on the existing site. The cost is $10 million.

(b) Option B: Buy a new building. The cost is $8 million plus a $2 million annual maintenance fee.

(c) Graph the total cost as a function of the number of years the building will be used.

(d) Determine the number of years for which Option A and Option B will cost the same.

3. You are planning a trip to another planet.

(a) You have two options: Option A: Travel by spaceship. The cost is $2 million.

(b) Option B: Travel by teleportation. The cost is $1 million plus a $0.5 million annual maintenance fee.

(c) Graph the total cost as a function of the number of years the trip will be taken.

(d) Determine the number of years for which Option A and Option B will cost the same.

4. You are planning a trip to a distant galaxy.

(a) You have two options: Option A: Travel by spaceship. The cost is $2 million.

(b) Option B: Travel by teleportation. The cost is $1 million plus a $0.5 million annual maintenance fee.

(c) Graph the total cost as a function of the number of years the trip will be taken.

(d) Determine the number of years for which Option A and Option B will cost the same.