9. Tara is evaluating two **mutually exclusive** capital budgeting projects that have the following characteristics:

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Q</th>
<th>Project R</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$(4,000)</td>
<td>$(4,000)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>3,500</td>
</tr>
<tr>
<td>2</td>
<td>5,000</td>
<td>1,100</td>
</tr>
</tbody>
</table>

IRR: 11.8% 12.0%

If the firm’s required rate of return \( r \) is 10 percent, which project should be purchased?

a. Both projects should be purchased, because the IRRs for both projects exceed the firm’s required rate of return.

b. Neither project should be purchased, because the IRRs for both projects exceed the firm’s required rate of return.

c. Project Q, because its net present value (NPV) is higher than Project R’s NPV.

d. Project R, because its NPV is higher than Project Q’s NPV.

e. None of the above is a correct answer.

To answer this question, you must compute the NPV for each project. NPV

\[
\begin{align*}
\text{Net Present Value of Project Q} & = -4,000 + \frac{0}{(1.10)^1} + \frac{5,000}{(1.10)^2} = -4,000 + 4,132.23 = 132.23 \\
\text{Net Present Value of Project R} & = -4,000 + \frac{3,500}{(1.10)^1} + \frac{1,100}{(1.10)^2} = -4,000 + 3,181.82 + 909.09 = 90.91
\end{align*}
\]

None of the above is a correct answer.

RETURN TO THE SAMPLE QUESTIONS