

### Question 1

WinHom Roofing Materials, Inc., is considering two mutually exclusive projects. The cash outflows and inflows are as follows:

	Project A	Project B
<b>Initial Investment</b>	\$145,000	\$150,000
<b>Year</b>	<b>Cash Inflow</b>	
<b>1</b>	\$45,000	\$75,000
<b>2</b>	45,000	60,000
<b>3</b>	45,000	30,000
<b>4</b>	45,000	30,000
<b>5</b>	45,000	30,000
<b>6</b>	45,000	30,000

As an assistant project manager, help WinHom Roofing Materials make an investment decision on its projects by answering the following questions.

1.1 Calculate the internal rate of return (IRR). Please provide all necessary information used in the calculation procedures. Which project would you recommend to invest?

Answer:

	Project A	Project B
IRR =	21.28%	22.71%

1.2 If the company's cost of capital is 4%, calculate the net present value (NPV) and the profitability index (PI) for each project.

Answer:

	Project A	Project B
NPV =	90,896.16	78,270.02
PI =	1.63	1.52

1.3 According to IRR and PI from (1.1) and (1.2), respectively, discuss any conflict in ranking that may exist between IRR and PI. And which project will you recommend to invest? Why?

Answer:

	Project A	Project B
IRR =	21.28%	22.71%
NPV =	90,896.16	78,270.02
PI =	1.63	1.52

Yes, in this case, we should use and follow NPV criterion.

So that, the company should invest in Project A.

1.4 Explain possible reasons that lead to conflict in ranking between IRR and PI in this case.

Answer:

1. Initial investment difference
2. Timing of cash flows