1. The Cal-Fruit Company specializes in decorative fruit baskets. Currently, the company is analyzing purchase alternatives for a fruit-polishing machine. Data relevant to the decision are as follows:

|  |  |  |
| --- | --- | --- |
|  | **Machine A** | **Machine B** |
| Cost | $90,000 | $82,000 |
| Useful life | 5 years | 5 years |
| Residual value | $2,000 | $3,000 |
| Estimated annual net cash flows | $35,000 | $30,000 |
|  |  |  |
| Present value multipliers at 12 percent: | |  |
| Dollar received at the end of five years | | .567 |
| Dollar received at the end of each of the next five years | | 3.605 |

a. Compute the payback period for each of the alternatives. Round answers to two decimal places.

b. Using the net present value method, prepare an analysis to determine which machine the company should purchase. (The company uses a 12 percent minimum desired rate of return.)

2. Valprado Industries is thinking of purchasing a machine that will produce plastic kitchenware. The machine would be used for five years, would cost $35,000, would have a $5,000 residual value, and would increase annual net cash inflows by $8,800. Valprado uses the straight-line method of depreciation. Using the above facts and the present value factors below, calculate (a) the payback period (if necessary, round off and carry to one decimal place), (b) the accounting rate of return (if necessary, round off and carry to one decimal place), and (c) the machine's net present value (use parentheses to indicate a negative net present value) based on a 12 percent minimum desired rate of return (if necessary, round to the nearest dollar).

|  |  |  |
| --- | --- | --- |
| **End of Period** | **Present Value of $1 at 12 Percent** | **Present Value of an Annuity of $1**  **at 12 Percent** |
| 1 | .893 | .893 |
| 2 | .797 | 1.690 |
| 3 | .712 | 2.402 |
| 4 | .636 | 3.038 |
| 5 | .567 | 3.605 |
|  |  |  |

3You are given the following present value factors at 8 percent, the Tehachapi Glass Company's minimum desired rate of return:

|  |  |  |
| --- | --- | --- |
| **End of Period** | **Present Value of $1** | **Present Value of an Annuity of $1** |
| 1 | .926 | .926 |
| 2 | .857 | 1.783 |
| 3 | .794 | 2.577 |
| 4 | .735 | 3.312 |
| 5 | .681 | 3.993 |
| 6 | .630 | 4.623 |

The Tehachapi Glass Company is considering the replacement of a piece of equipment. The old machine has a carrying value of $800 and a remaining estimated life of five years, with no residual value at that time. Present residual value is $200. The new equipment will cost $1,200, including transportation and installation. It has an estimated life of five years, with no residual value then. Annual cash operating costs are $405 for the old machine and $165 for the new machine. Round answers to two decimal places.

a. Compute the present value of the operating cash outflows for the old machine.

b. Compute the present value of the operating cash outflows for the new machine.

c. Compute the present value of the cash operating savings if the new machine is purchased.

d. What is the net present value of the replacement alternative?