Average Rate of Return Method, Net Present Value Method, and Analysis

The capital investment committee of Cross Continent Trucking Inc. is considering two capital investments. The estimated income from operations and net cash flows from each investment are as follows:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Warehouse** | | | |  | **Tracking Technology** | | | | |
| **Year** | **Income from Operations** | | **Net Cash Flow** | |  | **Income from Operations** | | **Net Cash Flow** | |  |
| 1 | $31,200 |  | $94,000 |  |  | $66,000 |  | $150,000 |  |  |
| 2 | 31,200 |  | 94,000 |  |  | 50,000 |  | 127,000 |  |  |
| 3 | 31,200 |  | 94,000 |  |  | 25,000 |  | 89,000 |  |  |
| 4 | 31,200 |  | 94,000 |  |  | 11,000 |  | 61,000 |  |  |
| 5 | 31,200 |  | 94,000 |  |  | 4,000 |  | 43,000 |  |  |
| Total | $156,000 |  | $470,000 |  |  | $156,000 |  | $470,000 |  |  |

Each project requires an investment of $520,000. Straight-line depreciation will be used, and no residual value is expected. The committee has selected a rate of 15% for purposes of the net present value analysis.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Present Value of $1 at Compound Interest** | | | | | |
| **Year** | **6%** | **10%** | **12%** | **15%** | **20%** |
| 1 | 0.943 | 0.909 | 0.893 | 0.870 | 0.833 |
| 2 | 0.890 | 0.826 | 0.797 | 0.756 | 0.694 |
| 3 | 0.840 | 0.751 | 0.712 | 0.658 | 0.579 |
| 4 | 0.792 | 0.683 | 0.636 | 0.572 | 0.482 |
| 5 | 0.747 | 0.621 | 0.567 | 0.497 | 0.402 |
| 6 | 0.705 | 0.564 | 0.507 | 0.432 | 0.335 |
| 7 | 0.665 | 0.513 | 0.452 | 0.376 | 0.279 |
| 8 | 0.627 | 0.467 | 0.404 | 0.327 | 0.233 |
| 9 | 0.592 | 0.424 | 0.361 | 0.284 | 0.194 |
| 10 | 0.558 | 0.386 | 0.322 | 0.247 | 0.162 |

**Required:**

**1a.**Compute the average rate of return for each investment. If required, round your answer to one decimal place.

|  |  |
| --- | --- |
|  | **Average Rate of Return** |
| Warehouse | % |
| Tracking Technology | % |

**1b.**Compute the net present value for each investment. Use the present value of $1 table above. If required, use the minus sign to indicate a negative net present value.

|  |  |  |
| --- | --- | --- |
|  | **Warehouse** | **Tracking Technology** |
| Present value of net cash flow total | $ | $ |
| Less amount to be invested | $ | $ |
| Net present value | $ | $ |