Net Present Value Method, Present Value Index, and Analysis

United Bankshores, Inc. wishes to evaluate three capital investment proposals by using the net present value method. Relevant data related to the proposals are summarized as follows:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Branch Office Expansion** | | **Computer System Upgrade** | | **Install Internet Bill-Pay** | |
| Amount to be invested | | $762,994 |  | $591,414 |  | $281,481 |  |
| Annual net cash flows: | |  |  |  |  |  |  |
|  | Year 1 | 369,000 |  | 273,000 |  | 173,000 |  |
|  | Year 2 | 343,000 |  | 246,000 |  | 119,000 |  |
|  | Year 3 | 314,000 |  | 218,000 |  | 87,000 |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **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:**

**1.**Assuming that the desired rate of return is 10%, prepare a net present value analysis for each proposal. Use the present value of $1 table above. If required, use the minus sign to indicate a negative net present value. If required, round to the nearest dollar.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Branch Office Expansion** | **Computer System Upgrade** | **Install Internet Bill-Pay** |
| Present value of net cash flow total | $ | $ | $ |
| Amount to be invested | $ | $ | $ |
| Net present value | $ | $ | $ |

**2.**Determine a present value index for each proposal. If required, round your answers to two decimal places.

|  |  |
| --- | --- |
|  | **Present Value Index** |
| Branch Office Expansion |  |
| Computer System Upgrade |  |
| Install Internet Bill-Pay |  |