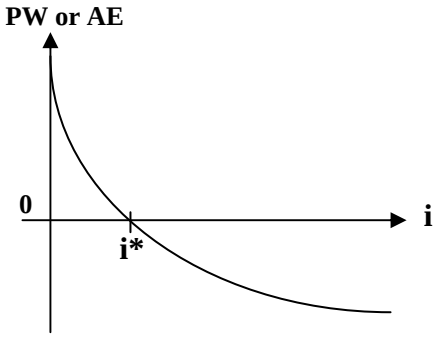
RATE OF RETURN CALCULATIONS

The rate of return is the interest rate at which the equivalent cash inflow equals the equivalent cash outflow.

The relationship between the present worth and the rate of return is given in the following graph:

As it can be seen from the graph, i* is the interest rate which equates the present worth or annual equivalent to zero.



Comparison of Alternatives with Incremental Rate of Return Method

If there are many mutually exclusive alternatives, then this method is applied by following the steps given below:

1. List the alternatives in ascending order of their first cost or initial disbursements.

2. Select the alternative with the smallest first cost as the initial 'Current Best' alternative.

3. Compare the initial 'current best' alternative with the first 'challenging' alternative. The 'challenger' is always the next highest alternative in order of first cost. The comparison is accomplished by examining the differences between the two cash flows. The difference is taken by subtracting the 'current best' from the 'challenger'. If the rate of return of the incremental cash flow is greater than the MARR, then the challenger becomes the new current best alternative. If the rate of return is equal or less than the MARR, then the current best alternative remains unchanged and the challenger is eliminated. The new challenger is the next alternative in order of first cost that has not been a challenger previously.

4. Repeat the comparisons of the 'challengers' to the 'current best' alternatives until every alternative other than the initial 'current best' has been a challenger. The alternative that maximizes present worth and provides a rate of return that exceeds the MARR is the last 'current best' alternative.