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# Chegg Study

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## Equivalent Annual Cost (EAC)

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If you have a \$500,000 portfolio and own an annuity, you have a lot at stake.

Make sure you understand the details by downloading **Annuity Insights: Your Guide to Better Understanding Annuities** by Forbes columnist Ken Fisher's firm. This guide is designed to help you better understand these investments.

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FISHER INVESTMENTS

	Item A	Item B
Investment Cost	4954000	
Expected Lifetime	20	
Maintenance Cost	297000	
7 % <-- Enter Cost of Capital		

Note: Go **premium** for additional features

Item A has an investment cost of \$4,954,000.00, a lifetime of 20 periods, with a maintenance cost per period of \$297,000.00

Item B has an investment cost of \$0.00, a lifetime of periods, with a maintenance cost per period of \$0.00

Calculate the Equivalent Annual Cost (EAC) for each Item using a cost of capital of 7% and determine a conclusion

Calculate v:

$$v = \frac{1}{1 + \text{Cost of Capital}}$$

$$v = \frac{1}{1 + 0.07}$$

$$v = \frac{1}{1.07}$$

$$v = 0.9346$$

Calculate Discount Factor for Item 1:

$$a_{\overline{20}|0.07} = \frac{(1 - v^{\text{Asset Lifetime}})}{\text{Cost of Capital}}$$

$$a_{\overline{20}|0.07} = \frac{(1 - 0.9346^{20})}{0.07}$$

$$a_{\overline{20}|0.07} = \frac{(1 - 0.258532730942)}{0.07}$$

$$a_{\overline{20}|0.07} = \frac{0.741467269058}{0.07}$$

$$a_{\overline{20}|0.07} = 10.5924$$

In **Microsoft Excel**, this function can be written in a cell as **=PV(0.07,20,-1)**

Calculate Discounted Investment for Item 1:

$$\text{Discounted Investment for Item 1} = \frac{\text{Investment Cost}}{\text{Cost}}$$

$$a_{\overline{20}|0.07}$$

$$\begin{array}{r} \text{Discounted Investment for Item} \\ 1 = \end{array} \frac{\$4,954,000.00}{10.5924}$$

$$\begin{array}{l} \text{Discounted Investment for Item 1 =} \\ \$467,693.82 \end{array}$$

Calculate EAC for Item 1

EAC1 = Discounted Investment + Maintenance  
Cost

$$\text{EAC1} = \$467,693.82 + \$297,000.00$$

$$\text{EAC1} = \mathbf{\$764,693.82}$$

Calculate Discount Factor for Item 2:

$$a_{\overline{j}|0.07} = \frac{(1 - v^{\text{Asset Lifetime}})}{\text{Cost of Capital}}$$

$$a_{\overline{j}|0.07} = \frac{(1 - 0.9346)}{0.07}$$

$$a_{\overline{j}|0.07} = \frac{(1 - 1)}{0.07}$$

$$a_{\overline{j}|0.07} = \frac{0}{0.07}$$

$$a_{\overline{j}|0.07} = \mathbf{0}$$

In **Microsoft Excel**, this function can be written  
in a cell as **=PV(0.07,,,-1)**