**In-class Activity 1:** A countermeasure is estimated to reduce the expected average crash frequency of fatal/injury by 5 crashes per year and the number of PDO crashes by 11 per year over the service year of the project. What is the annual monetary benefit associated with the crash reduction? Assume, discount rate 4%, and service year 5 years.

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**Formula to convert uniform annual benefits to a present value**

$\left(A, i,y\right)=\frac{\left(1+i\right)^{y}-1 }{i\*\left(1+i\right)^{y} } $ Where $i$ = discount rate, $y$= year in the service life of the countermeasure

**In-class Activity 2:** As a transportation engineer, you decided to install a roundabout for improving safety at intersection 2. Consider CMFs of roundabout for total crashes and F/I crashes are 0.56 and 0.18 respectively. Installation cost is expected to be $2 million. Estimate present value monetary benefit of installing roundabout for 10 years of service life.

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