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(* Solving for the duration weights 2010 5-15-30 Example
   Macaulay duration of the par bonds *)
(1.0456 / (.0456)) * (1 - (1 / ((1.0456) ^ 30))) // N
```

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Out[63]= 16.9120835
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```
In[65]:= (1.04 / (.04)) * (1 - (1 / ((1.04) ^ 15))) // N
```

```
Out[65]= 11.5631229
```

```
In[67]:= ((1.0236) / (.0236)) * (1 - (1 / ((1.0236) ^ 5))) // N
```

```
Out[67]= 4.77469593
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```
In[68]:= Solve[(x * 4.7747) + ((1 - x) * 16.912) == 11.563, x, Reals]
```

```
Out[68]= {{x -> 0.440707571}}
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In[69]:= (* Verify *)
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```
11.563 - ((.4407 * 4.7747) + ((1 - .4407) * 16.912))
```

```
Out[69]= -0.00009189
```