

Financial Management For Engineers

EMGT 6305

SPRING 2022

Lingxuan Ye

HW 5

Section 2

Problem 1

|  |
| --- |
| EBIT = $ 8,400,000 |
| I = 40,000,000 × 3.75% = $ 1,500,000 |
| EBT = 8,400,000 - 1,500,000 = $ 6,900,000 |
| Tax at 21% = 6,900,000× 21% = $ 1,449,000 |
| EAT = 6,900,000 - 1,449,000 = $ 5,451,000 |

Problem 2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No of Payment | Amount of Mortgage | P&I | Amount of Interest | Reduction of Principal | Balance |
| 1 | 550,000 | 2,650.55 | 1,833.33 | 817.22 | 549,182.78 |
| 2 | 549,182.78 | 2,650.55 | 1,830.61 | 819.94 | 548,362.84 |

Problem 3

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No of Payment | Amount of Mortgage | P&I | Amount of Interest | Reduction of Principal | Balance |
| 1 | 650,000 | 4,871.99 | 2,166.67 | 2,705.32 | 647,294.68 |
| 2 | 647,294.68 | 4871.99 | 2,157.65 | 2,714.34 | 644,580.34 |

However, I think the algorithm for Problem 2&3 is not correct. The reduction of priciple should take place at the end of year because the compound interest actually yields in every end of year, and that P&I could be regard as a prepaid money with no time value of money. To supplement, appendix is the Excel sheet interpreting the diffences among algorithms for the example in 5th lecture notes.

Problem 4