**Year 12 General Mathematics – 8E - Interest only and sinking funds**

**8E Question 2 – calculations**



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| **Question Section** | **Formula and calculations** | **Answer** |
| 1. Find the half-yearly interest the club must pay on the loan.
 | **I = P x I x n**I = 3,000,000 x .05 x ½ | I = $75,000 interest payments every six months |
| 1. How much must be deposited into a sinking fund each month?
 | N =5 x 12 = 60I = 4.2PV = 0**PMT = 0**FV = 3,000,000P/Y = 12C/Y = 12 | PMT = -$45,020.74$45,020.74 must be put into the sinking fund each month to off principal.  |
| 1. Find the total cost of the loan to the football club.
 | Interest = $75,000 x 10 payment = **$750,000**Principal = $45020.74 x 60 payments = **$2,701,244.40**Total loan cost -= $750,000 + $2,701,244.40 = **$3,451,244.40** |
| 1. Find the value of the sinking fund after 3 years.
 | N =3 x 12 = 36I = 4.2PV = 0PMT = 45020.74**FV = 0**P/Y = 12C/Y = 12 | **FV = $1,724,071.79** |
| 1. Find the book value of the debt after 3 years
 | Debt = $3,000,000Sinking Fund value after 3 years = $1,724,071.79Book value = $3,000,000 - $1,724,071.79 = **$1,275,928.21** |