

Find the interest rate needed for a sinking fund to accumulate \$25,600 in five years with monthly payments (made at the end of the month) of \$400.

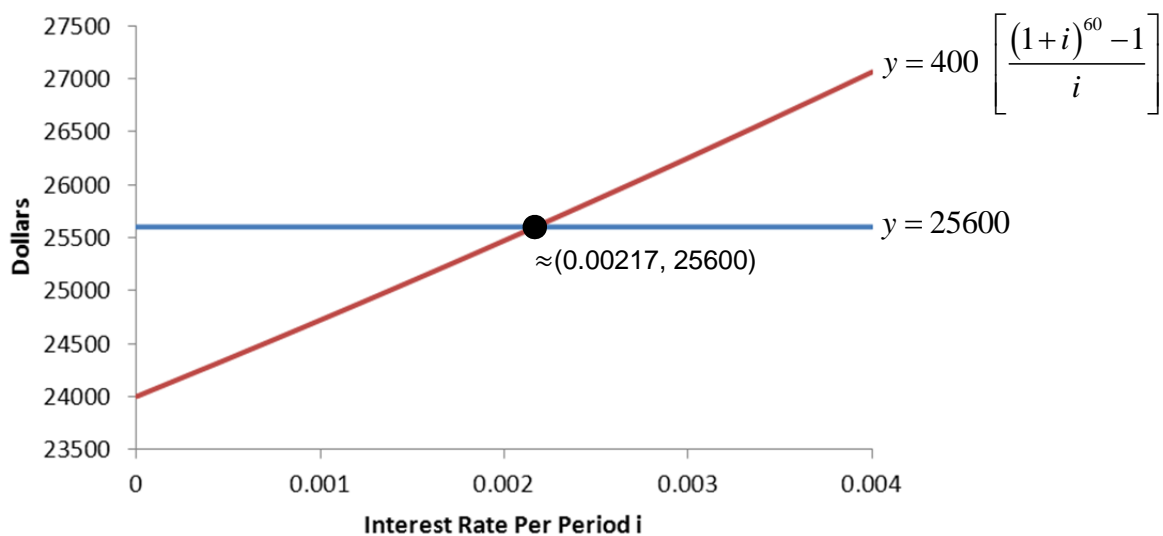
Use the ordinary annuity formula with i unknown.

$$FV = PMT \left[\frac{(1+i)^n - 1}{i} \right]$$

Set $PMT = 400$, $FV = 25600$, and $n = 60$

$$25,600 = 400 \left[\frac{(1+i)^{60} - 1}{i} \right]$$

This is incredibly difficult to solve for i algebraically. Instead, graph each side of the equation and look for a point of intersection.



The annual interest rate is $12 \cdot 0.00217 \approx 0.02604$ or approximately 2.6%.

The same answer may be found with the TVM Solver using $N = 60$, $PV = 0$, $PMT = -400$, $FV = 25600$, $P/Y = 12$, and $C/Y = 12$. Then move the cursor to the $I\%$ line and press **ALPHA** **ENTER**.