Answer on Question #43342, Math, Other

A university invests $600,000 at simple interest, part at 6%, half that amount at 4.5%, and the rest at 3.5%. What is the most that the university can invest at 3.5% and be guaranteed $24,600 in interest per year?

Solution:

So let x = amount invested at 4.5% ;

2x = amount invested at 6% ;

600000-3x=amount invested at 3.5% ;

4.5%*x+6%*2x+3.5%*(600000-3x)=24,600

0.045x+0.12x+21000-0.105x=24600

0.06x=3600

x=60000

600000-3x=420000

most that the university can invest at 3.5% = $420,000

Answer: $420,000