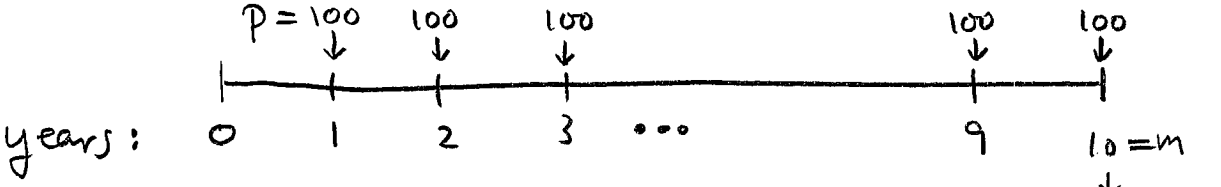
Some useful formulas:

$$A = P\left(1+\frac{r}{n}\right)^{nt} \qquad A = P(1+rt)$$

$$A = P\left[\frac{(1+i)^m - 1}{i}\right] \qquad V = P\left[\frac{1-(1+i)^{-m}}{i}\right]$$

(1) [3] Determine the amount of the annuity (that is, the future value) if deposits of \$100 are made at the end of each year for 10 years. The interest rate on the deposits is 10% compounded annually. (Round your answer to two decimal places.)



$i = \frac{0.10}{1} = 0.10$

$\therefore A = P\left[\frac{(1+i)^m - 1}{i}\right]$

$= 100\left[\frac{(1+0.1)^{10} - 1}{0.1}\right]$

$\approx \boxed{\$1593.74}$

(2) [6] Dan wishes to have \$350,000 in a pension fund 20 years from now. How much should he deposit at the end of each month into an account paying 5% compounded monthly to have \$350,000 at the end of the 20 years? (Round your answer to two decimal places.)

$(20)(12) = 240 = m.$

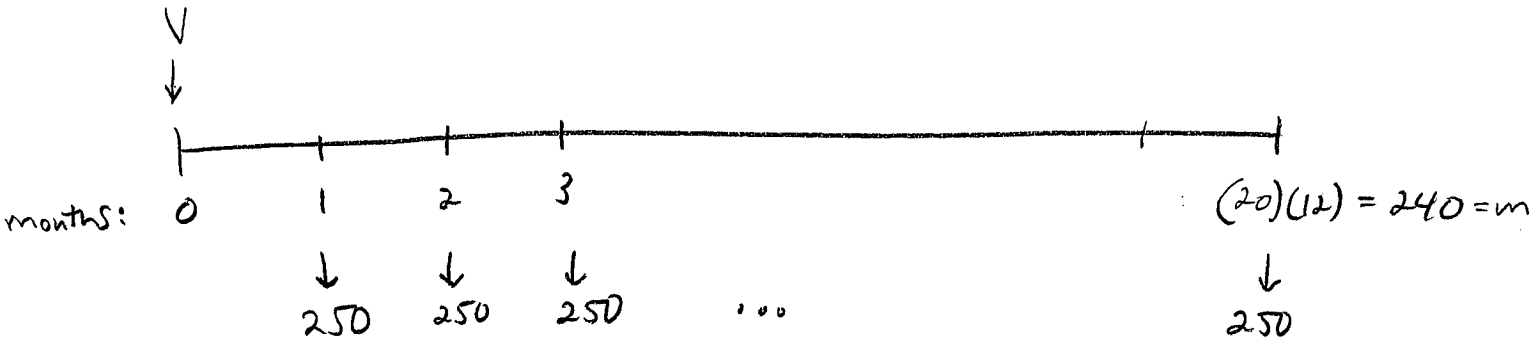
$A = \$350{,}000$

$i = \frac{0.05}{12}$

$P = \frac{A}{\left[\frac{(1+i)^m - 1}{i}\right]}$

$= \frac{350{,}000}{\left[\frac{\left(1+\frac{0.05}{12}\right)^{240} - 1}{\left(\frac{0.05}{12}\right)}\right]} \approx \boxed{\$851.51}$

(3) [6] A person has just retired at age 65 and wants to provide himself retirement income for the next 20 years. An investment fund which pays 5% per annum compounded monthly is available. What lump sum deposit into the investment fund is required now which will allow withdrawals of \$250 at the end of each month for the next 20 years? (Round your answer to two decimal places.)



$i = \frac{0.05}{12}$

$$V = P\left[\frac{1-(1+i)^{-m}}{i}\right]$$

$$= 250\left[\frac{1-\left(1+\frac{0.05}{12}\right)^{-240}}{\left(\frac{0.05}{12}\right)}\right]$$

$$\approx \boxed{\$\,37,881.33}$$