Name:

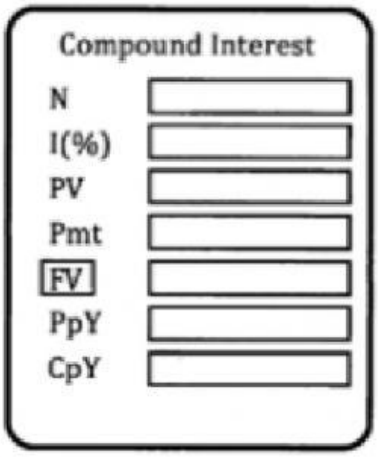
When the number of payments per year ≠ number of times interest is compounded per year

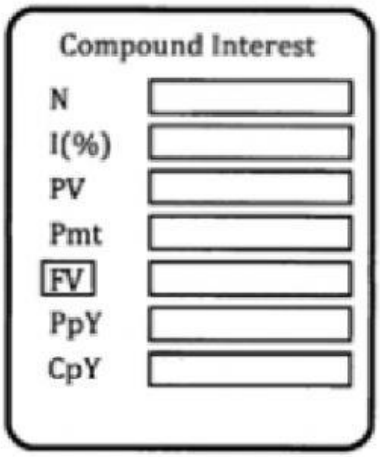
Please include what you enter into classpad in the diagrams

Question 1: Alba invests $360 000 in an annuity at a rate of 9% per annum compounded monthly. She receives a regular payment of $45 000 at the end of every year.

a) What is the balance of the annuity after five years (to 2 d.p.)?

b) How long will the annuity last to the nearest year?





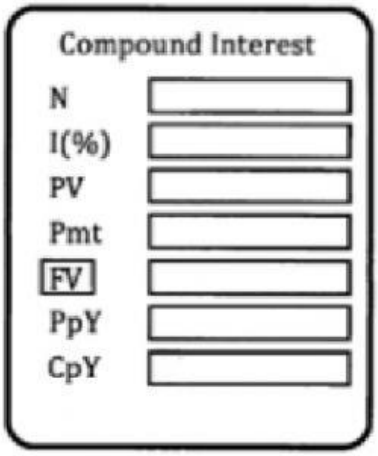
$

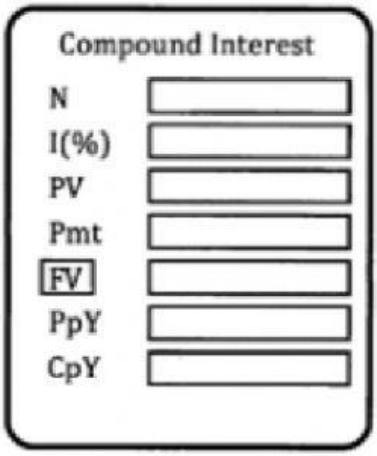
years

Question 2: Donald invests $600 000 in an account which pays 8.7% per annum compounding annually. He withdraws $20 000 each quarter for living expenses.

a) What is the balance of the account after five years?

b) How long will it take to reduce the balance of the account to $0?





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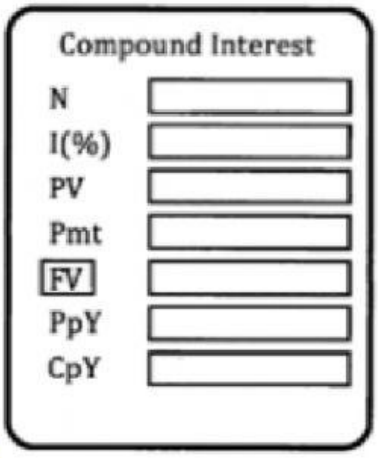
withdrawals

years

Question 3: A sum of $500 000 is invested into an account which pays 6% per annum compounded monthly. Every year $60 000 is withdrawn from the account until it is depleted.

a) What is the balance of this account after the sixth withdrawal?

b) For how many years will this investment pay the sum of $60 000?



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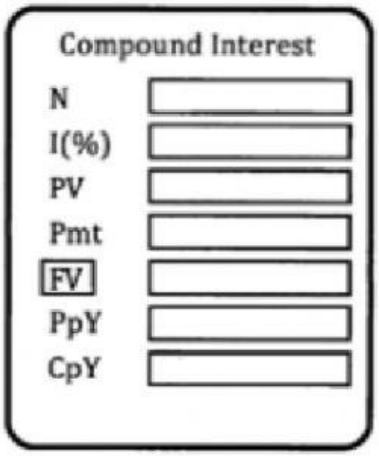
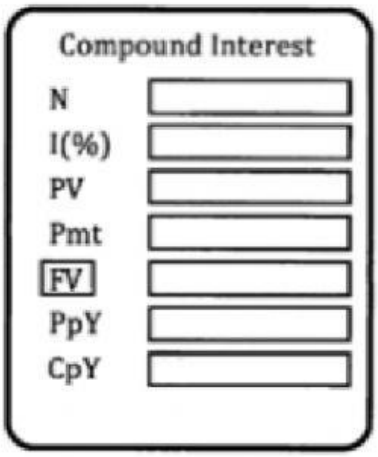


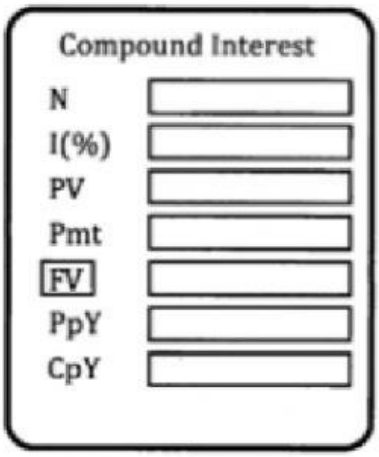
years

Question 4: How much should be invested in an annuity account that pays $40 000 annually for 20 years at a rate of 7% per annum

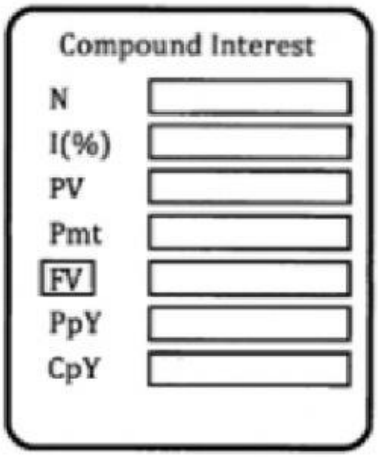
a) Compounded monthly $

b) compounded quarterly $





Question 5: Darren is considering investing $250 000 in a 15 year annuity earning 6% per annum compounding monthly. To draw down his investment, how much to the nearest cent, will he be able to withdraw each year?



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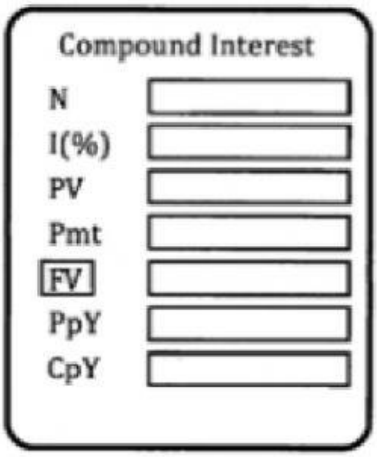
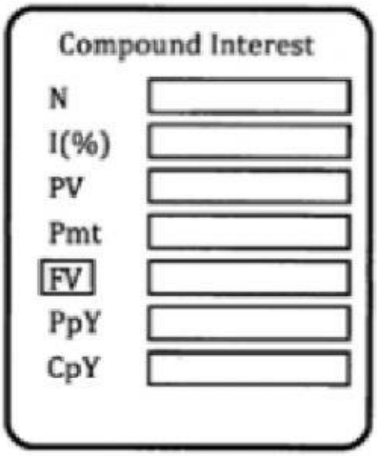
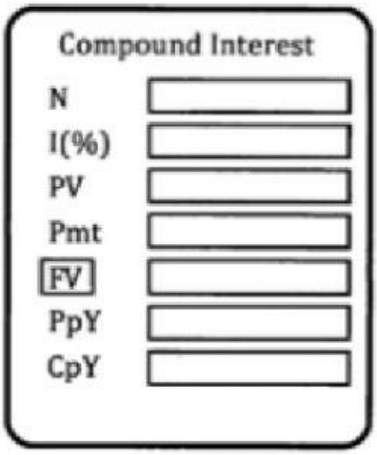
Question 6: A sum of $800 000 is invested into an account which pays 4% per annum compounding annually. How much can be withdrawn every 3 months for 15 years to deplete this account?



Question 7: How much must Matthew invest in an account which pays 5% per annum compounded annually to allow him to make 6 monthly withdrawals of $5000 over 20 years? How much interest was added t othis account over its lifetime?



Question 8: What investment will be able to finance a quarterly annuity of $25 000 for 10 years? The interest rate offered on this investment is 9% per year compounded annually.



b) How much interest was added to this account over its lifetime?

c) How much did the annuitant receive in total over the life of the annuity?

Amortization

PM1	
PM2	
I%	
PV	
PMT	
P/Y	
C/Y	

$

Question 9: Olivia invested $450 000 into an account paying 8.5% per annum compounded monthly. The terms of the investment allow Olivia to make 3 monthly withdrawals of $16 000 until the balance of the account is depleted.

a) How many withdrawals of $16000 will Olivia be able to make?

Compound Interest

N	
I(%)	
PV	
Pmt	
FV	
PpY	
CpY	

withdrawals of $16 000

b) What final withdrawal will deplete the account?

Amortization

PM1	
PM2	
I%	
PV	
PMT	
P/Y	
C/Y	

$

c) What is the balance of Olivia's account after 9 years?

Amortization

PM1	
PM2	
I%	
PV	
PMT	
P/Y	
C/Y	

$

d) How much interest did Olivia's account generate over the life of the annuity?

Amortization

PM1	
PM2	
I%	
PV	
PMT	
P/Y	
C/Y	

$