Midterm #2 Financial Functions Practice #1 Annotated Answers

REMEMBER: Ignore negatives and round ansers to the nearest dollar; will explain why in subsequent weeks.
If you understand these problems, you'll do great on the midterm.

#1 Output = FV "how much will have been saved at retirement" **NOTICE: PER year = PMT**

($425,487.03)

Inputs: n = 45 (70-25); PMT = $2,000 ("per year"); rate = 6% PV = 0 ("no savings")

#2 BOTH Output = PV "Present Value of Option One"

OPTION ONE Inputs: PMT = $30,000 ("per year"); n = 10; rate = 6% **NOTICE: PER year = PMT**

($220,802.61)

OPTION TWO Inputs: FV = $450,000 "lump sum in 12 years"; n =12; rate = 6%

($223,636.21)

OPTION TWO HAS A HIGHER PRESENT VALUE & IS THE BEST OPTION.

#3 Output = PMT "monthly payment" **REMEMBER: FOR ALL LOANS, DO MONTHLY**

($1,794.26)

Inputs: PV = $350,000 (loan amount); rate = 4.6%/12; n = 30*12

#4 Output = PMT ". . .must be saved each year . . ." **NOTICE: EACH YEAR = PMT**

($8,644.54)

Inputs: FV = $1,000,000 ("savings goal"); n = 45 (75 - 30); PV = $70,000 ("presently have savings of"; rate = 7%.

#5 Output = PV "how much should an investor pay" **NOTE: INVESTMENT VALUES = PV**

($21,979.73)

Inputs: FV = $20,000 (face value); PMT = $1,200 per year; rate = 5%; 14 years

#6 Output = PV "how much should an investor pay" **NOTE: INVESTMENT VALUES = PV**

($36,534.51)

Inputs: FV = $50,000 (face value); rate = 4.0%; 8 years

#7 Output = PV "how much can you borrow", loan amount

($518,045.88)

Inputs: PMT = $95,000 per year * 32% / 12; **NOTE: *32% allocates annual income to annual payment**
rate = 4.2%/12; n = 30*12 **Dividing by 12 converts annual payment to monthly payment**

#8 Output = PMT ("must be saved each year") **NOTICE: EACH YEAR = PMT**

($5,405.57)

Inputs: FV = $1,150,000 ("savings goal"); rate = 6%; n = 45 (75-30)

#9 Output = FV "will have been saved at retirement" **Note: Student loan is a liability, input as negative value**

$104,908.78

Inputs: PMT = $3,600 ("per year"); PV = -$55,000 ("student loan"); rate = 7%; n = 40 (70 - 30)

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#10 Output = NPV ("net present value")

$922,210.57

Input:	Year One	$80,000	
	Year Two	$85,000	
	Year Three	$93,000	
	Year Four	$914,000	**4th year income includes income from operations of $94,000**

+ $820,000 from proceeds of selling property = $914,000

Rate = 7%

#11 Output = IRR ("intenral rate of return")

7.7%

Note: Before the clock starts (time 0), you buy the property for $900,000.

Input:	Year 0	-$900,000
	Year One	$80,000
	Year Two	$85,000
	Year Three	$93,000
	Year Four	$914,000

Input the purchase price as a negative number, $ going out .

BE SURE TO ROUND % ANSWER TO NEAREST TENTH

NO input required for "Guess" in function box.

#12

	Year 1	Year 2	Year 3	
Annual Gross Income	$168,000	$176,400	$185,220	**Increase each year gross income 5% by multiplying by 1.05**
Vacancy & Collection Loss (7%)	$11,760	$12,348	$12,965	**Multiply each year annual gross income by 7%**
Annual Effective Gross Income	$156,240	$164,052	$172,255	**Subtract vacancy figure from annual gross income for each year**
Annual Expenses	$40,000	$42,000	$44,100	**Increase each year expenses 5% by multiplying by 1.05**
Annual Net Income	$116,240	$122,052	$128,155	**Subtract expense figure from effective gross income for each year**

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