

A	B	C	D	E	F	G	H
1 FIL 260 Spreadsheet Homework Problem 3: Real Estate Investment (this output is for the practice input values, not the ones to submit)							
2 Student Name							
3							
4 Total Property Purchase Price	9100000		Owner's Equity Investment (Purchase Price - Loan)				=B4-B7
5 Land Value	1950000						
6 Depreciable Life in Years (Rental Residential)	27.5		Depreciable Basis (Purchase Price - Land Value)				=B4-B5
7 Amount Borrowed on Loan	6400000		Depreciation in Yr. 2, 3, or 4 ((Purch Price - Land)/Life)				=H6/B6
8 Loan Amortization Period in Years	25		Depreciation Yr. 1 or 5 (11.5/12 of Yr. 2 - 4 value)				=H7*11.5/12
9 Annual Stated (APR) Interest Rate on Loan	0.078						
10 Initial Monthly Rent per Unit	1720		Three years of depreciation, years 2 - 4				=3*H7
11 Number of Units	48		Two years of depreciation, years 1 & 5				=2*H8
12 Expected Annual Rent Percentage Increase	0.03		Total depreciation claimed (recaptured under Sec. 1250)				=G10+G11
13 Expected Annual Vacancy/Uncollectible Percentage	0.05		Remaining book value at end of yr 5 (Purch Pr - Tot Depr):				=B4-G12
14 Operating Expense Percentage	0.33						
15 Expected Resale Price	11300000		Initial Annual Rent (monthly rent x 12 x # units)				=B11*B10*12
16 Expected Selling Expense Percentage	0.06						
17 Investor's Required Return on Equity	0.105		Loan Amortization Period in Months (# years x 12)				=B8*12
18 Investor's Ordinary Income Tax Rate	0.34		Monthly Interest Rate on Loan (annual rate / 12)				=B9/12
19 Ordinary Capital Gain Tax Rate	0.15		Monthly Loan Payment (from loan payment formula)				=B7/((1-(1+H18)^-H17)/H18)
20 Section 1250 Depreciation Recapture Tax Rate	0.25		Annual Loan Payment Total (monthly payment x 12)				=H19*12
21							
22 Net Present Value (as computed below)	=H76		=IF(B22>=0,"Investment is acceptable since NPV is \$0 or greater","Investment is unacceptable since NPV is less than \$0")				
23 Internal Rate of Return (as computed below)	=H74		=IF(B23>=B17,"Investment acceptable since IRR equal to or greater than req. annual return","Investment unacceptable since IRR less than req. annual return")				
24							
25 Loan to Value Ratio (L/V)	=B7/B4		Initial Year's Debt Coverage Ratio (DCR)				=C55/F31
26							
27 LOAN AMORTIZATION INFORMATION							
28							
29	Year	Ending Month	Initial Principal Owed	Ending Principal Owed	Year's Total Payment	Principal Repaid	Interest Paid
30	0	0		=B7			
31	=B30+1	=C30+12	=E30	=SH\$19*((1-(1+SH\$18)^-(SH\$17-C31))/SH\$18)	=SH\$20	=D31-E31	=F31-G31
32	=B31+1	=C31+12	=E31	=SH\$19*((1-(1+SH\$18)^-(SH\$17-C32))/SH\$18)	=SH\$20	=D32-E32	=F32-G32
33	=B32+1	=C32+12	=E32	=SH\$19*((1-(1+SH\$18)^-(SH\$17-C33))/SH\$18)	=SH\$20	=D33-E33	=F33-G33
34	=B33+1	=C33+12	=E33	=SH\$19*((1-(1+SH\$18)^-(SH\$17-C34))/SH\$18)	=SH\$20	=D34-E34	=F34-G34
35	=B34+1	=C34+12	=E34	=SH\$19*((1-(1+SH\$18)^-(SH\$17-C35))/SH\$18)	=SH\$20	=D35-E35	=F35-G35
36							
37 CAPITAL GAIN TAX			AFTER-TAX EQUITY REVERSION				
38 Gross Selling Price	=B15		Gross Selling Price				=B15
39 Minus Selling Expense	=B16*B38		Minus Selling Expense				=B16*G38
40 Equals Net Selling Price	=B38-B39		Equals Net Selling Price				=G38-G39
41 Minus Remaining Book Value	=H13		Minus Loan Payoff (see above)				=E35
42 Equals Capital Gain	=B40-B41		Equals Before-Tax Equity Reversion				=G40-G41
43 Minus Section 1250 Depreciation Recapture	=G12		Minus Capital Gain Tax				=B48
44 Ordinary Capital Gain	=B42-B43		Equals After-Tax Equity Reversion				=G42-G43
45							
46 Tax on Section 1250 Depreciation Recapture	=B43*B20						
47 Tax on Ordinary Capital Gain	=B44*B19						
48 Total Tax on Capital Gain	=B46+B47						
49							
50 CASH FLOW COMPUTATION	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	
51 Potential Gross Income (PGI)	=H15	=C51*(1+B12)		=D51*(1+B12)	=E51*(1+B12)	=F51*(1+B12)	
52 Minus Losses from Vacancy and Uncollectibles	=SH\$13*C51	=SH\$13*D51		=SH\$13*E51	=SH\$13*F51	=SH\$13*G51	
53 Equals Effective Gross Income (EGI)	=C51-C52	=D51-D52		=E51-E52	=F51-F52	=G51-G52	
54 Minus Operating Expenses	=SH\$14*C53	=SH\$14*D53		=SH\$14*E53	=SH\$14*F53	=SH\$14*G53	
55 Equals Net Operating Income (NOI)	=C53-C54	=D53-D54		=E53-E54	=F53-F54	=G53-G54	
56 Minus Debt Service (see above)	=SH\$20	=SH\$20		=SH\$20	=SH\$20	=SH\$20	
57 Equals Before Tax Cash Flow to Equity (BTCF)	=C55-C56	=D55-D56		=E55-E56	=F55-F56	=G55-G56	
58 Minus Income Tax (see below)	=C69	=D69		=E69	=F69	=G69	
59 Equals After Tax Cash Flow to Equity (ATCF)	=C57-C58	=D57-D58		=E57-E58	=F57-F58	=G57-G58	
60							
61 Amount (Paid)/Received from Transaction	=H4						=G44
62							
63 INCOME TAX COMPUTATION							
64 Net Operating Income	=C55	=D55		=E55	=F55	=G55	
65 Minus Interest Expense (see above)	=H31	=H32		=H33	=H34	=H35	
66 Minus Depreciation	=H8	=H7		=H7	=H7	=H8	
67 Equals Taxable Income	=C64-C65-C66	=D64-D65-D66		=E64-E65-E66	=F64-F65-F66	=G64-G65-G66	
68 Income Tax @ Ordinary Income Tax Rate%	=C67*SH\$18	=D67*SH\$18		=E67*SH\$18	=F67*SH\$18	=G67*SH\$18	
69							
70							
71 NPV COMPUTATION	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	
72 After Tax Cash Flow to Equity (ATCF)	=H4	=C59	=D59	=E59	=F59	=G59	
73 After Tax Equity Reversion (ATER)							
74 Total of ATCF + ATER	=B72+B73	=C72+C73	=D72+D73	=E72+E73	=F72+F73	=G72+G73	IRR: =IRR(B74:G74)
75 PV Factor @ Investor's Required Annual ROE	=1+SH\$17)^-B30	=1+SH\$17)^-B31	=1+SH\$17)^-B32	=1+SH\$17)^-B33	=1+SH\$17)^-B34	=1+SH\$17)^-B35	NPV: =SUM(B76:G76)
76 PV of Total Cash Flows	=B74*B75	=C74*C75	=D74*D75	=E74*E75	=F74*F75	=G74*G75	