

## Real Estate Investment Analysis Fall 2002

### Midterm 2 Review Practice Problems - Solutions

*Dr. Stanley D. Longhofer*  
*T 7:05-9:45*

- 1) Walter owns an office building that he purchased several years ago for \$3.5 million, including transaction costs. He has claimed total (cumulative) depreciation (cost recovery allowances) of \$360,000. He has made no capital improvements during his holding period.

The prospective buyer has offered Walter \$5 million for the property to be paid as follows: The buyer will pay \$500,000 cash immediately and assume Walter's existing \$2.5 million mortgage. The remaining \$2 million will be paid in two annual installments including both principal and interest at 8 percent.

If Walter accepts this offer and incurs \$250,000 of sales costs, what will be the resultant increase in his taxable income in the year of the transaction and in each of the three succeeding years, assuming he uses the installment method of reporting the sale?

First, calculate the profit ratio:

$$\begin{aligned} \text{Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Contract Price}} \\ &= \frac{5,000,000 - 250,000 - (3,500,000 - 360,000)}{5,000,000 - 2,500,000} \\ &= \frac{1,610,000}{2,500,000} \\ &= 0.644 . \end{aligned}$$

Next, calculate the required payment on the seller financing:  $PV = 2,000,000$ ,  $I = 8$ ,  $N = 2$ ,  $P/Y = 1$ , and  $FV = 0 \Rightarrow PMT = \$1,121,538$ . Use the amortization worksheet in your calculator to calculate the portion credited to interest in the table below.

Based on this, recognized taxable income is presented in the table below. Interest income will be taxable at the ordinary income tax rate, while the recognized gain is taxable at the appropriate capital gains tax rate.

	<u>Year 0</u>	<u>Year 1</u>	<u>Year 2</u>
Income received	\$500,000	\$1,121,538	\$1,121,538
Less interest income	-0-	<u>160,000</u>	<u>83,077</u>
Principal received	500,000	961,538	1,038,461
Times profit ratio	<u>0.644</u>	<u>0.644</u>	<u>0.644</u>
Recognized gain	322,000	619,230	668,770

2) George, owns rental property worth \$750,000 and subject to a mortgage of \$200,000. His adjusted tax basis in the property is \$300,000. He trades with Gerald for a like-kind property worth \$500,000, which is subject to a mortgage balance of \$100,000. Each party takes title subject to existing mortgages. If necessary, either party will put up cash to balance the equities.

a) How much cash must be put up by whom to balance the equities?

<u>George gives up</u>		<u>George receives</u>	
Property exchanged	\$750,000	Property acquired	\$500,000
– Mortgage	<u>200,000</u>	– Mortgage	<u>100,000</u>
Equity	\$550,000	Equity	\$400,000
		+ Cash boot	<u>150,000</u>
		Total equity received	\$550,000

Gerald will give George \$150,000 in cash boot to balance the equities.

b) How much total boot has George received?

Mortgage relief	\$100,000
Cash boot	<u>150,000</u>
Total boot received	\$250,000

c) What is George's realized, recognized, and deferred gain from this transaction?

Market value	\$750,000
– Adjusted basis	<u>300,000</u>
Realized gain	\$450,000
Recognized gain	<u>250,000</u>
Deferred gain	\$200,000

d) What is George's substitute basis in his new property?

Fair market value	\$500,000
– Deferred gain	<u>200,000</u>
Substitute basis	\$300,000