

Financial Considerations Regarding Housing

-Comparing the Costs of Housing Units of Varying List Prices & Terms

The following conditions will affect the total cost of housing units:

1. Total list price of housing unit
2. Terms under which the loan is assumed
 - A. Rate of interest on loan
 - B. Amount of down payment (as percentage of list price)
 - C. Number of years of loan.

The enclosed worksheets are designed to enable you to compare the costs of housing units, considering these variations.

Helen L. Wells, Extension Specialist, Housing
Extension Division
Virginia Polytechnic Institute and State University
MI-132

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Variables to Consider

Sixteen sets of variables are described below. Use one set of variables listed on this page to work through the worksheet on page 3 (for example, A1 would be a \$30,000 unit, which could be obtained under the terms of 10% down, 10-year loan, at 8%). If you are working in groups, assign each person a different set of variables so you can combine your answers for comparisons in problems 2, 3, 4, and 5.

- | | |
|-------------------------------|-------------------------|
| A. List Price <u>\$30,000</u> | <u>8%</u> |
| (A1) 10% down, 10 years | (A2) 20% down, 10 years |
| (A3) 10% down, 20 years | (A4) 20% down, 20 years |
|
 | |
| B. List Price <u>\$30,000</u> | <u>8-1/2%</u> |
| (B1) 10% down, 10 years | (B2) 20% down, 10 years |
| (B3) 10% down, 20 years | (B4) 20% down, 20 years |
|
 | |
| C. List Price <u>\$40,000</u> | <u>8%</u> |
| (C1) 10% down, 10 years | (C2) 20% down, 10 years |
| (C3) 10% down, 20 years | (C4) 20% down, 20 years |
|
 | |
| D. List Price <u>\$40,000</u> | <u>8-1/2%</u> |
| (D1) 10% down, 10 years | (D2) 20% down, 10 years |
| (D3) 10% down, 20 years | (D4) 20% down, 20 years |

Problem I: Figure amount of down payment and total cost of housing. Use the following form for each of the 16 sets of variables listed on page 3.

List Price \$ _____; Rate of interest _____%; Percentage
of down payment _____; Number of years of loan _____.
(a) (b) (c) (d)

1-1. According to the table provided on page 8, it costs _____ in equal
payments per month to amortize a debt of \$1,000 in _____ years at
_____%.
(e) (d) (b)

1-2. List price times percentage of down payment = amount of down payment.

$$\text{_____} \times \text{_____} = \text{_____}.$$

(a) (c) (f)

1-3. List price minus amount of down payment equals amount to be borrowed.

$$\text{\$ _____} \text{ minus } \text{\$ _____} = \text{\$ _____}.$$

(a) (f) (g)

1-4. Amount to be borrowed divided by 1000 equals number of thousands of dollars to be borrowed.

$$\text{\$ _____} \div 1000 = \text{_____}.$$

(g) (h)

1-5. Number of thousands of dollars to be borrowed times the amount it takes in equal payments to amortize a loan equals the amount of each monthly payment.

$$\text{_____} \times \text{\$ _____} = \text{\$ _____}.$$

(h) (e) (i)

1-6. Number of years of loan times 12 equals number of monthly payments to be made.

$$\text{_____} \times 12 = \text{_____}.$$

(d) (j)

1-7. Number of monthly payments to be made times amount of each monthly payment = amount expended for principal and interest.

$$\text{_____} \times \text{\$ _____} = \text{\$ _____}.$$

(j) (i) (k)

1-8. Amount expended on principal and interest plus amount of down payment equals total cost of housing.

$$\text{\$ _____} + \text{\$ _____} = \text{_____}.$$

(k) (f) (l)

Problem II: Comparison of percentage of down payment and number of years of loan.
 Use the following form for the four sets of variables listed on page 2, A, B,
 C, D, and determined on the workseets, page 3.

List Price \$ _____; Rate of Interest _____%

A. Comparison of total costs of housing:

Total Cost of House for	A,B,C,D-1:	A,B,C,D-2:	A,B,C,D-3:	A,B,C,D-4:
	10% down	20% down	10% down	20% down
	10 years	10 years	20 years	20 years
(1) down payment (f) from question 1-2 of problem 1, p. 3.	\$	\$	\$	\$
(2) total amount spent on monthly payments (principal & interest) (k) from question 1-7) of problem 1, p. 3)	\$	\$	\$	\$
(3) total housing cost	\$	\$	\$	\$

B. Comparison of monthly payments

	A,B,C,D-1:	A,B,C,D-2:	A,B,C,D-3:	A,B,C,D-4:
Questions: (1) from question 1-5 of problem 1)	10% down 10 years	20% down 10 years	10% down 20 years	20% down 20 years
	\$ _____	\$ _____	\$ _____	\$ _____

C. With amount of down payment and number of years as variables:

1. With which set of variables is total cost of house least?
2. With which set of variables is total cost of house most?
3. With which set of variables is monthly payment least?
4. With which set of variables is monthly payment most?

PROBLEM III: Comparison of total cost of housing considering the four variables: list price, rate of interest, amount of down payment, number of years of loan. Use the following form to record the information for the 16 sets of variables listed on page 2 and worked out by the worksheet on page 3 (same as from question 1-8 on p.3)

Problem	List Price of Housing	Rate of Interest	Variables of Amount of down payment		No. of years of loan payment	
			10% down, 10 years	20% down, 10 years	10% down, 20 years	20% down 20 years
Group A	\$30,000	8%				
A1.			-----			
A2.				-----		
A3.					-----	
A4.						-----
Group B	\$30,000	8-1/2%				
B1.			-----			
B2.				-----		
B3.					-----	
B4.						-----
Group C	\$40,000	8%				
C1.			-----			
C2.				-----		
C3.					-----	
C4.						-----
Group D	\$40,000	8-1/2%				
D1.			-----			
D2.				-----		
D3.					-----	
D4.						-----

PROBLEM IV: Comparison of monthly payment for housing based on the four variables: list price, rate of interest, amount of down payment and number of years of loan payment. Use the following form to record the information for the 16 sets of variables listed on page 2 and worked out using the work sheet on page 3 (same as from question 1-5 on page 31).

MONTHLY PAYMENTS

Problem	List Price of Housing	Rate of Interest	Variables of Amount of down payment		No. of years of loan pay	
			10% down, 10 years	20% down, 10 years	10% down, 20 years	20% down, 20 years
Group A	\$30,000	8%				
A1.			-----			
A2.				-----		
A3.					-----	
A4.						-----
Group B	\$30,000	8-1/2%				
B1.			-----			
B2.				-----		
B3.					-----	
B4.						-----
Group C	\$40,000	8%				
C1.			-----			
C2.				-----		
C3.					-----	
C4.						-----
Group D	\$40,000	8-1/2%				
D1.			-----			
D2.				-----		
D3.					-----	
D4.						-----

PROBLEM V

In the problems presented

1. Which set of variables results in the highest total cost of housing?
(From Problem III) _____
2. In the least total cost of housing?
(From Problem III) _____
3. In the largest monthly payment spent for housing?
(From Problem IV) _____
4. In the smallest monthly payment spent for housing?
(From Problem IV) _____
5. If 20% of take-home pay is spent on the housing unit, what amount of take-home pay is needed to afford the housing in

Monthly take-home pay	Yearly take-home pay
A1. _____	_____
A2. _____	_____
A3. _____	_____
A4. _____	_____
B1. _____	_____
B2. _____	_____
B3. _____	_____
B4. _____	_____
C1. _____	_____
C2. _____	_____
C3. _____	_____
C4. _____	_____
D1. _____	_____
D2. _____	_____
D3. _____	_____
D4. _____	_____

Monthly payments for each \$1,000*
borrowed

Inter- est rate (Per- cent)	10 yrs.	15 yrs.	20 yrs.	25 yrs.	30 yrs.
5	\$10.61	\$ 7.91	\$6.60	\$5.85	\$5.37
5-1/2	10.86	8.18	6.88	6.15	5.68
6	11.11	8.44	7.17	6.45	6.00
6-1/2	11.36	8.72	7.46	6.76	6.33
7	11.62	8.99	7.76	7.07	6.66
7-1/2	11.88	9.28	8.06	7.39	7.00
8	12.14	9.56	8.37	7.72	7.34
8-1/2	12.40	9.85	8.68	8.06	7.69
9	12.67	10.15	9.00	8.40	8.05
9-1/2	12.94	10.45	9.33	8.74	8.41
10	13.22	10.75	9.66	9.09	8.78

*Taken from page 15 of Selecting and Financing a Home; Home and Garden Bulletin No. 182.