

17. *Qualifying for a Mortgage* Pietr and Helga Guenther's gross monthly income is \$3200. They have 25 remaining car payments of \$335. The Guenthers are applying for a 15-year, \$150,000 mortgage at 5% interest to buy a new house. The taxes and insurance on the house are \$225 per month. Their credit union will approve a loan that has a total monthly mortgage payment of principal, interest, property taxes, and homeowners' insurance that is less than or equal to 28% of their adjusted monthly income.

a) Determine 28% of the Guenther's adjusted monthly income.

$$3200 - 335 = 2865$$

$$\times .28$$

$$\boxed{802.20}$$

b) Determine the Guenther's total monthly mortgage payment, including principal, interest, taxes, and homeowners' insurance.

$$\frac{150,000}{1000} \times 7.91 = 1186.5 \text{ P/I}$$

$$225 \text{ T/I}$$

$$\hline 1411.50$$

c) Do the Guenthers qualify for this mortgage?

c) NO

18. *Qualifying for a Mortgage* Ting-Fang and Su-hua Zheng's gross monthly income is \$4100. They have 18 remaining boat payments of \$505. The Zhengs are applying for a 20-year, \$275,000 mortgage at 9% interest to buy a new house. The taxes and insurance on the house are \$425 per month. Their bank will approve a loan that has a total monthly mortgage payment of principal, interest, property taxes, and homeowners' insurance that is less than or equal to 28% of their adjusted monthly income.

a) Determine 28% of the Zheng's adjusted monthly income.

$$\begin{array}{r} 4100 - 505 = 3595 \\ \times .28 \\ \hline 1006.60 \end{array}$$

b) Determine the Zheng's total monthly mortgage payment, including principal, interest, taxes, and insurance.

$$\begin{array}{r} \frac{275000}{1000} \times 9 = 2475 \text{ P/I} \\ \quad \quad \quad 425 \text{ T/I} \\ \hline 2900 \end{array}$$

c) Do the Zhengs qualify for this mortgage? **NO**

Determine monthly payments

<http://www.bankrate.com/calculators/mortgages/mortgage-calculator.aspx>

1900

EXAMPLE 3 *The Total Cost of a House*

Patricia and Marshall Martin of Examples 1 and 2 purchased a house selling for \$249,000. They made a 15% down payment of \$37,350 and obtained a 30-year conventional mortgage for \$211,650 at 7.0%. They also paid 2 points at closing. Their monthly principal and interest payment on their mortgage is \$1407.47. Recall that $.02(211,650)$ points are considered prepaid interest.

- Determine the total amount including principal, interest, down payment, and points the Martins will pay for their house over 30 years.
- How much of the cost in part (a) is interest?
- How much of the first mortgage payment is applied to the principal?

$$\begin{array}{r}
 a) \quad 1407.47 \overset{360}{(12 \cdot 30)} = 506689.20 \quad \begin{array}{l} P/I \\ \text{Down} \\ \text{points} \end{array} \\
 \quad \quad \quad + 37,350 \\
 \quad \quad \quad + 4233 \\
 \hline
 \quad \quad \quad 548272.20
 \end{array}$$

$$\begin{array}{r}
 b) \quad \underline{\quad - 249000} \\
 \quad \quad 249272.20 \quad \begin{array}{l} \text{Interest} \\ 1407.47 P/I \end{array}
 \end{array}$$

$$\begin{array}{r}
 c) \quad I = 211650(.07)\left(\frac{1}{12}\right) = 1234.63 \text{ Int.} \\
 \quad \quad \quad \underline{\quad \quad \quad} \\
 \quad \quad \quad 172.84 \text{ Principal}
 \end{array}$$