Example 5: Putting It All Together

Jazmin and Lenny Montgomery are looking to purchase a house. They are looking at a house that costs $318 000. They have saved enough money to make a 5% down payment.

a) Calculate the amount of the mortgage that the Montgomerys require.

mortgage = Purchased price − down payment

5% of 318 000 = $\frac{5}{100} \times 318\,000 = 15900$

= $318 000 − 15 900

= $302 100

b) The Montgomery's bank offers them a mortgage at 4.75% for 20 years. Determine the amortization rate for this mortgage.

$6.44 / 1000

c) Calculate the Montgomerys monthly payment if they accept this mortgage.

monthly payment = amortization rate × mortgage

= $\frac{6.44}{1000} \times 302\,100$ = $1945.52

d) Calculate the amount that the Montgomery's will pay back to the bank over the life of the mortgage.

Total amount paid back = monthly payments × 12 × # of years

= $1945.52 × 12 × 20

= $466 924.80

e) Calculate the total amount of interest paid to the bank for this mortgage.

Interest Paid = TOTAL PAID BACK − Amount Borrowed

= $466 924.80 − $302 100

= $164 824.80

f) The Montgomerys decide to go with a different bank, who offered them a 20-year mortgage at 4.25%. The amortization rate for this mortgage with a better rate is $6.17 per $1000. Calculate how much interest the Montgomery's save by going with this new mortgage.

Saving: 6.44/1000 − 6.17/1000 = $\frac{0.27}{1000}$

Per month saving: $\frac{0.27}{1000} \times 302\,100$ = $81.57 per month

Over 20 years: monthly savings × 12 months × 20 years

$81.57 × 12 × 20

TOTAL saving = $19576.08