Chapter 8 Review

Student Text Pages
412–413

Suggested Timing
75 min

Materials and Technology Tools
- TVM solver
- computer with Internet access (optional)

Related Resources
- BLM 8–9 Chapter 8 Review
- BLM A–13 Self Assessment Recording Sheet

Accommodations

Motor–encourage students to use technology for calculations

Ongoing Assessment
- Upon completing the Chapter 8 Review, students can also answer questions such as the following:
  - What questions did you find easy? Difficult? Why?
  - How often did you have to check the related worked example in the textbook to help you with the questions? For which questions?
- You may wish ask students to complete a copy of **BLM A–13 Self-Assessment Recording Sheet** to assist you in assessing your students.

Using the Chapter Review

- The Chapter Review is organized by sections and is designed to review different skills and concepts in this chapter.
- The students might work independently to complete the Review, then in pairs to compare solutions.
- Alternatively, the Review could be assigned for reinforcing skills and concepts in preparation for the Practice Test. Provide an opportunity for the students to discuss any questions containing strategies or questions with features that they find difficult.
- After students complete the Chapter Review, encourage them to make a list of questions that caused them difficulty, and include the related sections and teaching examples. They can use this to focus their studying for a final test on the chapter's content.
- Use **BLM 8-9 Chapter 8 Review** for extra review.

Chapter 8 Problem Wrap-Up

Student Text Page
413

Suggested Timing
45 min

Materials and Technology Tools
- computer with Internet access (optional)
- TVM solver (optional)

Related Resources
- BLM 8–10 Chapter Problem Wrap-Up Rubric

Accommodations

Motor–encourage students to use technology for calculations

Summative Assessment

- Use **BLM 8–10 Chapter 8 Problem Wrap-Up Rubric** to assess student achievement.

Using the Chapter Problem

- The Chapter Problem Wrap Up represents a culmination of the concepts and skills learned in the chapter. Students are encouraged to review the chapter problem revisits, if they completed them, to provide guidance when answering the Wrap Up questions.

Level 3 Notes

- Student identifies the given or known values for each child's situation.
- Student uses the correct formula for each child's situation.
- Values are correctly substituted into each formula.
- Calculations are mostly accurate.
- Student uses the appropriate technology where necessary.
- Calculations are presented neatly and formal concluding statements are provided.

Level 3 Sample Response

Oldest Child:

PV = 34 000, $i = 0.07 \div 12$, $n = 10 \times 12 = 120$

$$\text{PMT} = \frac{(\text{PV})(i)}{[1-(1+i)^{-n}]}$$

$$= \frac{(3400)\left(\frac{0.07}{12}\right)}{\left[1-\left(1+\frac{0.07}{12}\right)^{-120}\right]}$$

$$\doteq 394.76882$$

Her monthly payment will be \$394.77.

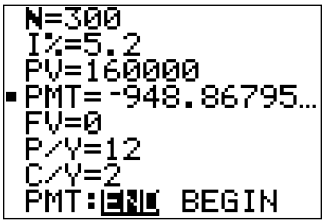
Her total payment will be
$120 \times \$394.77 = \$47\,372.40$.

Total interest paid $= 47\,372.40 - 34\,000$
$= 13\,372.40$

The total interest on the 10-year loan will be \$13 372.40.

Middle Child:

Because the compounding period and payment period are not the same, use a TVM Solver. The principal will be the difference between the house price and the down payment, \$160 000. Over 25 years he will make 300 payments.



His monthly mortgage payment will be \$948.87.

Youngest child:

This problem needs to be broken into parts. The current value of his fund is known. The future value of the fund must be determined using the compound interest formula for a single amount. Then find the future value for the annuity.

Determine the value of the fund for values for $n = 14$, 24, and 34.

Lump Sum Value, $A = P(1 + i)^n$ Annuity Value, FV = PMT$\left[\frac{(1 + i)^n - 1}{i}\right]$

When $n = 14$,

$A = 116\,000(1 + 0.07)^{14}$ $FV = 1500\left[\frac{\left(1 + \frac{0.07}{12}\right)^{168} - 1}{\frac{0.07}{12}}\right]$

$\doteq 299\,109.96$ $\doteq 426\,055.02$

At age 40 his retirement savings will have a value of $725 164.98.

When $n = 24$,

$A = 116\,000(1 + 0.07)^{24}$ $FV = 1500\left[\frac{\left(1 + \frac{0.07}{12}\right)^{288} - 1}{\frac{0.07}{12}}\right]$

$\doteq 588\,394.57$ $\doteq 1\,115\,853.52$

At age 50 his retirement savings have a value of $1 704 248.09.

When $n = 34$,

$A = 116\,000(1 + 0.07)^{34}$ $FV = 1500\left[\frac{\left(1 + \frac{0.07}{12}\right)^{408} - 1}{\frac{0.07}{12}}\right]$

$\doteq 1\,115\,461.17$ $\doteq 2\,502\,114.93$

At age 60 his retirement savings have a value of $3 659 576.10.

What Distinguishes Level 2

- Student identifies the given or known values for each child's situation.
- Student applies the correct formulas for two situations.
- If more than two formulas are correctly chosen, calculations are not carried out correctly.
- No concluding statements are provided.
- Student fails to recognize the need to use two formulas for youngest child's fund.

What Distinguishes Level 4

- Student identifies the given or known values for each child's situation.
- Student uses the correct formula for each child's situation.
- Values are correctly substituted into each formula.
- Calculations are accurate for all situations.
- Student uses the appropriate technology where necessary.
- Calculations are presented in a report format and formal concluding statements are provided.