

Financial Applications Review

Answer key Final answers only. Try first, then check.

CORE SKILLS

- K1** a) \$56.00
b) \$1657.50
c) $P = \$1200$; $r = 5\%/a$
- K2** a) \$3073.14
b) \$5729.58
c) \$2153.83; interest \$353.83
- K3** a) \$5347.57
b) \$10 569.50
c) 9.54%/a
- K4** a) \$3249.79
b) \$7158.38
c) \$221.70 per month
- K5** a) \$6540.57
b) \$432.70 per month
c) \$2769.60

REAL WORLD

- A1** a) $A = 4000(1.004)^n$; \$5082.56
b) $n \approx 173.6$
c) No: the balance only changes at month-ends, and 173.6 is not one. It is \$7979.81 after month 173 and first passes \$8000 at the end of month 174 (14.5 years), at \$8011.72.
- A2** a) \$151.52 per month
b) \$636.48
c) \$48.00. No: each payment is smaller than the interest charged, so the balance grows (\$3003.00 after one month) and is never paid off. The formula would need $1 - 1.016^{-n} = \frac{48}{45} > 1$, which is impossible.
- A3** a) \$180 per month; \$56 599.12
b) \$19 879.12 (deposits and grants total \$36 720)
c) $\frac{0}{0}$: the formula is undefined at $i = 0$. The jar holds $150 \times 204 = \$30\,600$.

THINK IT THROUGH

- T1** a) Deposit 4 is made at the end of year 4, so it earns no interest. The row should read 3, 2, 1, 0.
b) \$3448.10
c) Every term has one extra factor of 1.05: $3448.10 \times 1.05 \approx 3620.51$. It is correct if each deposit is made at the start of each year.
- T2** a) False for compound interest: e.g. \$1000 at 10%/a compounded annually earns \$100 in 1 year but \$210 in 2 years. (True for simple interest.)
b) False: $P(1+i)^n = 2P$ gives $(1+i)^n = 2$, which does not involve P . E.g. at 8%/a compounded annually, \$1000 and \$2000 both first double after 10 years.
c) False: e.g. \$10 000 at 6%/a compounded monthly costs \$193.33 a month over 5 years but \$359.79 a month over 2.5 years, less than $2 \times 193.33 = \$386.66$.

BOSS LEVEL

- Boss**
- a) 10%/a
 - b) \$576.19
 - c) Pay cash: the pay-later plan is worth \$1088.20 today, so cash saves about \$88.20.
-

Free worksheet · vertexmath.ca · Free to print and share for classroom use

Free to print, copy, adapt and share for classroom use · CC BY-NC 4.0 · © VertexMath



vertexmath.ca

Hints, answers &
more worksheets