

Financial Literacy
Unit 1 Line Master 4a**Coding: Practice with Interest**

1. a) Which of the code samples below accurately represents this scenario?

Scenario: CAN Bank offers a bank account option with simple interest of 4.0% per year. If \$3000 is put into this bank account, how much will the account be worth after 8 years?

Code A

```
principal = 3000
rate = 0.050
time = 0

for i in range (0,8):
    time = time + 1
    amount = (principal * rate * time) + principal
    print (time, '\t\t', amount)
```

Code B

```
principal = 2000
rate = 0.040
time = 0

for i in range (0,5):
    time = time + 1
    amount = (principal * rate * time) + principal
    print (time, '\t\t', amount)
```

Code C

```
principal = 3000
rate = 0.040
time = 0

for i in range (0,8):
    time = time + 1
    amount = (principal * rate * time) + principal
    print (time, '\t\t', amount)
```

- b) Explain why the other two code samples do not represent the given scenario.
- c) How much will the account be worth after 8 years?

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Unit 1 Line Master 4b**Coding: Practice with Interest (cont'd)**

2. a) Which of the code samples below accurately represents this scenario?

Scenario: A bank offers a loan at an annual interest rate of 6.5%, compounded monthly for 10 years. If the loan amount is \$100 000, how much will be owed after each year for 10 years?

Code A

```
principal = 150000
rate = 0.065
compoundFrequency = 12
time = 0

for i in range (0,5):
    time = time + 1
    amount = principal * (1 + rate/compoundFrequency)**(compoundFrequency*time)
    print (time, '\t\t', amount)
```

Code B

```
principal = 100000
rate = 0.065
compoundFrequency = 12
time = 0

for i in range (0,10):
    time = time + 1
    amount = principal * (1 + rate/compoundFrequency)**(compoundFrequency*time)
    print (time, '\t\t', amount)
```

Code C

```
principal = 100000
rate = 0.075
compoundFrequency = 365
time = 0

for i in range (0,10):
    time = time + 1
    amount = principal * (1 + rate/compoundFrequency)**(compoundFrequency*time)
    print (time, '\t\t', amount)
```

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Coding: Practice with Interest (cont'd)

b) Explain why the other two code samples do not represent the given scenario.

c) How much will be owed after each year for 10 years?