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Exponential Functions and Equations

24. Compound Interest

Lesson

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QUESTION 1

An investment of AED 2,000 is deposited in an account that earns 7% per year. Find the current value compounded semi-annually for 10 years. Round your answer to the nearest whole number.

Enter your answers in the spaces provided.

The current value compounded semi-annually for 10 years is AED

3,980 .

QUESTION 2

Shamma in investing AED **10,000** in a savings account that earns **5%** annual interest, compounded every month.

To find the value of Shamma's account after **6** years the compound interest formula will look like this:

$A =$

$$10,000\left(1+\frac{0.05}{12}\right)^{(12\times 6)}$$

QUESTION 3

Omar has invested AED 1,500 in an account that earns 3% annual interest compounded quarterly.

What is the equation that represents this situation?

Drag and drop the values to correctly complete the formula for compounded interest.

A ✓

$=$

$1,500$ ✓

$(1+$

$\frac{0.03}{4}$ ✓

$)^{x}$

$x =$

$4t$ ✓

t 4 $\frac{4}{0.03}$ 0.03

QUESTION 4

Bashir has invested AED 600 in an account that earns a 5% annual interest rate compounded three times a year. What is the equation that represents the situation?

Drag and drop the values to correctly complete the formula for compounded interest.

A ✓

$=$

600 ✓

$(1+$

$\frac{0.05}{3}$ ✓

$)^{x}$

$x =$

$3t$ ✓

0.05 $\frac{3}{0.05}$ 3 t

QUESTION 5

Which variable represents the current value of the investment in the compound interest formula

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

?

- [x] A ✓
- [ ] r
- [ ] n

- P

QUESTION 6

Which variable represents the initial investment in the compound interest formula $A = P\left(1 + \frac{r}{n}\right)^{nt}$?

- A
- r
- n
- P ✓

QUESTION 7

Maitha in investing AED **1,500** in a savings account that earns **4%** annual interest, compounded every **six** months.

To find the value of Maitha's account after **3** years the compound interest formula is used.

Select the correct one.

- $A = 1500\left(1 + \frac{4}{2}\right)^{(2 \times 3)}$
- $A = 1500\left(1 + \frac{0.04}{2}\right)^{(2 \times 3)}$ ✓
- $A = 1500\,(1 + 0.04)^{(2 \times 3)}$
- $A = 1500\left(1 + \frac{4}{6}\right)^{(6 \times 3)}$

QUESTION 8

Yasser wants to save money pay his son's college fees of AED 100,000.
If he invests AED 70,000 in an account that earns 6.25% interest that is compounded every six months, for 5 years, will he have enough money in his account? What is the amount?

- No, and the amount =AED 74,443
- Yes, and the amount =AED 176,204
- No, and the amount =AED 95,522
- No, and the amount =AED 95,222

No, and the amount =AED 95,222

QUESTION 9

An investment of AED 4,000 in an account that earns 8% per year compounded quarterly. How much money will there be in the account after 10 years? *Round your answer to the nearest whole number.*

Enter your answers in the spaces provided.

The current value compounded quarterly for 10 years is AED

8,832 .

QUESTION 10

Hessa in investing AED **2,000** in an account that earns **3%** annual interest, compounded every **six** months.

To find the value of Hessa's account after **5** years the compound interest formula will look like this:

$A =$

$$2000\left(1+\frac{0.03}{2}\right)^{(2\times 5)}$$

QUESTION 11

An investment of AED 4,000 is deposited in an account that earns 8% per year compounded annually. How much money will there be in the account after 10 years? Round your answer to the nearest whole number.

Enter your answers in the spaces provided.

The current value compounded annually for 10 years is AED

8,636 ✓.

QUESTION 12

Thana has invested AED 5,000 in an account that earns a 6% annual interest rate compounded every 2 months.

What is the equation that represents the situation?

Drag and drop the values to correctly complete the formula for compounded interest.

A ✓

$=$

$5,000$ ✓

$(1+$

$\frac{0.06}{6}$ ✓

$)^{x}$

$x =$

$6t$ ✓

t $\frac{6}{0.06}$ 0.06

QUESTION 13

Which variable represents the number of times interest is compounded in a year in the compound interest formula

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

?

- [x] n
- [ ] A
- [ ] P
- [ ] t

QUESTION 14

Compare an investment of AED 6,000 in an account that earns 9% annual interest compounded 3 times annually and an account compounded every month for 10 years. Round your answers to the nearest whole number.

Enter your answers in the spaces provided.

The current value for the account compounded 3 times annually for 10 years is AED 14,564.

The current value for the account compounded 12 times annually for 10 years is AED

14,708 ✓.

The account with a compounded interest 12 times in a year is AED

144 ✓ more than the account with a compounded interest 3 times a year.

QUESTION 15

Samira has invested AED 800 in an account that earns 2% annual interest compounded quarterly.

What is the equation that represents the situation?

Drag and drop the values to correctly complete the formula for compounded interest.

A ✓

$=$

800 ✓

$(1+$

$\frac{0.02}{4}$ ✓

$)^{x}$

$x =$

$4t$ ✓

$\frac{2}{0.02}$ | 2 | 0.02 | t

QUESTION 16

You deposit AED 1,500 in an account that earns 5% interest compounded yearly. Find the balance after 6 years. Round your answer to the nearest whole number.

- 1,740
- 1,830
- 2,100
- 2,010 ✓

QUESTION 17

An investment of AED 2,000 in an account earns 7% per year. Find the current value compounded 8 times per year for 10 years.

Drag and drop your answer to correctly complete the sentence.

The current value compounded 8 times per year for 10 years is about AED

4,015 ✓ .

4,048 2,820 5,014

QUESTION 18

Khamis invests AED 2,500 in an account that earns 4.3% interest that is compounded quarterly.
How much will Khamis have in his account in 10 years?
Round the answer to the nearest whole number.

- AED 3,100
- AED 2,609
- AED 3,834 ✓
- AED 2,782