

Key

Sept. 29 Worksheet

1. Suppose a principal amount of 25,000 is deposited into a savings account with an annual interest rate of 5.5% compounded annually. Find the compound amount after 8 years and the interest earned.

$$\text{Final Value} = \$38367.16$$

$$\text{Interest} = \$13367.16$$

2. A savings account with an initial deposit of 10,000 grows to 18,000 in 10 years. Assuming annual compounding, what is the annual interest rate?

$$\text{Rate} = 6.054\%$$

3. How much money needs to be deposited today into an account with an annual interest rate of 4.5% compounded annually to have a balance of 8,500 in 7 years?

$$\text{Principal} = \$6,246.04$$

4. What is the formula for continuous compound interest?

$$A = Pe^{rt}$$

↑
or
FV

5. Suppose that \$6500 is invested in a savings account at an annual rate of 4.5% compounded continuously for 6 years. What is the final amount?

$$FV = \$8514.77$$

6. What amount will an account have after 3 years if \$4000 is invested at an annual rate of 7%

Compounded monthly?

$$\$4931.70$$

Compounded continuously?

$$\$4934.71$$

7. What does APY stand for? What is that formula?

Annual Percentage Yield

$$APY = \left(1 + \frac{r}{m}\right)^m - 1$$

↑
or r_E

8. Chase bank offers a savings account with a nominal annual interest rate of 1.5% compounded daily. What is the APY for this account?

$$1.511\%$$

9. Find the APY for each of the given money market accounts. Which offers a higher yield?

First United Bank: 3.49% compounded weekly

3.55%

CapTex Bank: 2.79% compounded daily

2.83%

Frost Bank: 3.64% compounded monthly

3.7%

Frost offers a higher yield.