

Selected Answers

Name: _____ Period: _____

Score:
_____/_____
_____%

HW 4-5 HONORS: Compounded Interest

1. Cami invested \$6,000 dollars into an account that earns 10% interest compounded annually.
a. Write an explicit equation for how much money she will have after t years.

$$y = 6000(1.1)^t$$

- b. How much money will Cami have in 6 years? Round to the nearest hundredth.

$$\$10,629.37$$

2. Sarah's saving account currently has \$200. She earns 5% interest on her account compounded monthly.

- a. Write an explicit equation for how much money she will have after t years.

- b. How much money will Sarah have after 6 months? Round to the nearest hundredth.

3. Paul invested \$400 into an account with a 5.5% interest rate compounded monthly.

- a. Write an explicit equation for how much money she will have after t years.

$$y = 400 \left(1 + \frac{.055}{12} \right)^{12t}$$

- b. How much will Paul's investment be worth in 8 years? Round to the nearest hundredth.

$$\$620.46$$

4. Theo invested \$6,600 at an interest rate of 4.5% compounded monthly.

- a. Write an explicit equation for how much money he will have after t years.

- b. How much will Theo's investment be worth in 4 years? Round to the nearest hundredth.

5. Paige invested \$1200 at an interest rate of 5.75% compounded quarterly.
a. Write an explicit equation for how much money she will have after x years.

$$y = 1200 \left(1 + \frac{.0575}{4} \right)^{4x}$$

- b. How much will Paige's investment be worth in 7 years? Round to the nearest hundredth.

$$\$ 1789.54$$

6. Brooke is saving money for a trip to the Bahamas that costs \$295.99. She puts \$150 dollars into a savings account that pays 7.25% interest compounded quarterly. Will she have enough money in the account after 4 years? Explain.

7. Jin's investment of \$4,500 has been losing its value at a rate of 2.5% each year.
a. Write an explicit equation for how much money he will have after x years.

$$y = 4500 (0.975)^x$$

- b. How much will Jin's investment be worth in 5 years? Round to the nearest hundredth.

$$\$ 3964.93$$

8. Santos invested \$1,200 into an account with an interest rate of 8% compounded monthly. James invested \$1,500 into an account with an interest rate of 5% compounded quarterly.

- Write an explicit equation for how much money Santos will have after x years.
- Write an explicit equation for how much money James will have after x years.
- Who will have more money after 5 years?
- Who will have more money after 7 years?
- Who will have more money after 10 years?