

Compound Interest – Worksheet

MCR3U

Jensen

1) Marvin deposits \$100 into an account that pays interest at 5% per year, compounded annually.

a) Write an equation that can be used to calculate the amount in his account in the form $A = P(1 + i)^n$.

b) Complete the following table...

Number of Compounding Periods (years)	Amount (\$)
0	100
1	105
2	
3	
4	

2) Sadia deposits a \$2000 inheritance into an account that earns 4% per year, compounded annually. Find the amount in the account after each time.

a) 3 years

b) 8 years

3) Soda invests \$500 in an account that earns 7% per year, compounded annually. How long does Soda need to leave her investment in the account in order to double her money?

4) Art Vandelay deposited some money into an account that pays 3% per year, compounded annually. Today the account balance is \$660. How much was in the account...

a) 1 year ago

b) 5 years ago?

5) Elaine wants to invest some money that will grow to \$1000 in 6 years. If her account pays 4.5% interest, compounded annually, how much should Lydia invest today?

6) To buy a new guitar, Phoebe borrows \$650, which she plans to repay in 5 years. The bank charges 12% per annum, compounded annually.

a) Determine the amount that Phoebe must repay.

b) How much would she have to pay if the interest was compounded semi-annually instead of annually? (Hint: twice as many compounding periods but the interest rate will need to be cut in half)

c) How much would she have to pay if the interest was compounded monthly?

Answers

1) a) $A = 100(1.05)^n$ b)

Number of Compounding Periods (years)	Amount (\$)
0	100
1	105
2	110.25
3	115.76
4	121.55

2) a) \$2249.73 b) \$2737.14

3) 10.24 years

4) a) \$640.78 b) \$569.32

5) \$767.90

6) a) \$1145.52 b) \$1164.05 c) \$1180.85