

Compound Interest Worksheet

$$A = P (1 + r/n)^{(nt)}$$

A = final amount P = principal balance r = interest rate

n = number of times interest applied per time period

t = number of time periods elapsed

Mr. Cheese invests \$800 in an account which pays 20% compound interest per year.

If interest is compounded quarterly, find the accumulated value and compound interest after 2 years.

$$P = 800 \quad r = 20\% \quad n = \text{half yearly} \quad t = 2 \text{ years}$$

$$A = 800 (1 + .20/.25)^{.25(2)}$$

$$A = 800 (1.8)^{.5}$$

$$A = 1073.31$$

1) A person invests a certain amount in a compound interest scheme. If the money invested has doubled itself in 3 years, how long will it take for the money to become 4 times of itself?

2) The compound interest and simple interest on a certain sum for 2 years is \$1230 and \$1200 respectively. The rate of interest is the same for both compound interest and simple interest and it is compounded annually. What is the principle?

3) Matthew borrowed \$15,000 at 12% per year compounded annually. He repaid \$7000 at the end of 1st year. What amount should he pay at the end of the second year to completely discharge the load?

4) There is a 50% increase in an amount deposited in simple interest for 5 years. What will be the compound interest of \$10,000 after 3 years at the same rate?

5) Polly invests \$8,333 in savings account with a fixed annual interest rate of 8% compounded 2 times per year. What will the account balance be after 12 years?

6) Michelle invests \$2,658 in a retirement account with a fixed annual interest rate of 9% compounded continuously. What will the account balance be after 15 years?