

Question 1: Score 0/2

Suppose that 7,000 dollars are invested at 4 percent interest for 2 years.

- (a) If interest is computed as simple interest, what is the final balance? Give two decimal digits of precision.



Your Answer:

Correct Answer: 7,560±0.01

- (b) If interest is computed as compound interest (annually), what is the final balance? Give two decimal digits of precision.



Your Answer:

Correct Answer: 7,571.2±0.01

Question 2: Score 0/2

Suppose that 3,000 dollars are invested at 10 percent interest for 40 years.

- (a) If interest is computed as simple interest, what is the final balance? Give two decimal digits of precision.



Your Answer:

Correct Answer: 15,000±0.01

- (b) If interest is computed as compound interest (annually), what is the final balance? Give two decimal digits of precision.



Your Answer:

Correct Answer: 135,777.767±0.01

Question 3: Score 0/1

Thinking over your answers to the previous two questions, you would say that simple interest is a good approximation for compound interest when:



Your Answer:

Correct Answer: The interest rate is low and the timespan is short.

Question 4: Score 0/1

The world population in the year 2000 was 6 billion people. Suppose that the growth rate is 1.13 percent per year. What will the world population be in the year 2,008? Give your answer in billions, with 2 decimal digits of precision. For example, your answer might be 6.53 or something like that.



Your Answer:

Correct Answer: 6.564344±0.01

Question 5: Score 0/1

Suppose that 9 years ago, a car cost 13,500 dollars. What would a comparable car cost today, if the yearly inflation rate was 5.75 percent? You may round to the nearest dollar.



Your Answer:

Correct Answer: 22,328.3768±1

Question 6: Score 0/2

Suppose we want to have 15,500 dollars available in 8 years.

- (a) How much (in dollars) would we have to invest now, if we got 5.25 percent simple interest? Give two decimal digits of precision.



Your Answer:

Correct Answer: 10,915.493±0.01

- (b) How much (in dollars) would we have to invest now, if we got 5.25 percent annually compounded interest? Give two decimal digits of precision.



Your Answer:

Correct Answer: 10,293.3055±0.01

Question 7: Score 0/2

Suppose we start with 7,000 dollars, and want to have 8,000 dollars available in 6 years.

- (a) What percentage rate do we need if interest is computed as simple interest? Give your answer as a percent (without the percent sign), with two decimal digits of precision.



Your Answer:

Correct Answer: 2.380952±0.01

- (b) What percentage rate do we need if interest is compounded annually? Give your answer as a percent (without the percent sign), with two decimal digits of precision.



Your Answer:

Correct Answer: 2.250473±0.01

Question 8: Score 0/1

Suppose we start with 7,000 dollars, and want to double our money in 25 years.

- (a) What percentage rate do we need if interest is computed as simple interest? Give your answer as a percent (without the percent sign), with two decimal digits of precision.



Your Answer:

Correct Answer: 4±0.01

- (b) What percentage rate do we need if interest is compounded annually? Give your answer as a percent (without the percent sign), with two decimal digits of precision.



Your Answer:

Correct Answer: 2.811383±0.01

- (c) My answers to these two questions would have changed if the initial amount had been something different.



Your Answer:

Correct Answer: False

Question 9: Score 0/1

The CPI in the year 1,978 was 65.2, and the CPI in the year 2,005 was 195.3. Suppose that the annual inflation percentage was the same for each year in this span. What was that percent inflation rate? You could call this the average percent inflation over that span. Give your answer as a percent (without the percent sign), with two decimal digits of precision.



Your Answer:

Correct Answer: 4.146929±0.01

Question 10: Score 0/1

Find the balance after 1 year if the principal is \$8,000 and the annual interest rate of 8% is compounded quarterly. Give two decimal digits of precision.



Your Answer:

Correct Answer: 8,659.45728±0.05

Question 11: Score 0/1

A principal of \$10,000 was invested at an annual rate of 7%. The interest was compounded monthly. What was the balance after 20 years?



Your Answer:

Correct Answer: 40,387.3885±0.05

Question 12: Score 0/1

You deposit \$19,000. For two years you receive 6% interest compounded annually and then the next three years you receive 7% interest compounded annually. What is the balance after the 5 years? Give two decimal digits of precision.



Your Answer:

Correct Answer: 26,152.708±0.05

Question 13: Score 0/1

Roberta is financing a savings plan. She receives 6% nominal yearly interest compounded annually. In Jan. 1, 2000 she pays \$2,000 into the plan. On Jan. 1, 2001 she pays in \$2,000 and on Jan. 1, 2002 she pays in \$4,000. Assuming she does not make additional payments, how much money will she have accumulated on Jan. 1, 2008?



Your Answer:

Correct Answer: 11,869.0331±0.05

Question 14: Score 0/2

Suppose that a population of bacteria doubles every 32 minutes.

- (a) Use the Rule of 72 to estimate the percent growth per minute. Enter your answer as a percent, without the percent sign. Give one decimal digit of precision.



Your Answer:

Correct Answer: 2.25±0.1

- (b) Calculate the actual percent growth per minute. Enter your answer as a percent, without the percent sign. Give TWO decimal digits of precision.



Your Answer:

Correct Answer: 2.189715±0.01

Question 15: Score 0/2

Suppose a medicine has a half-life of 4.1 hours.

- (a) At what rate (percent per hour) does it leave the body? Give two decimal digits of precision.



Your Answer:

Correct Answer: 15.554201±0.01

- (b) After 20.5 hours, how much of the medicine (as a percent of the original dose) is still in the body? Give your answer as a percent without the percent sign. Give two decimal digits of precision, e.g. 20.54.



Your Answer:

Correct Answer: 3.125±0.01
