Compound Percentage Change

Give your answers to a sensible degree of accuracy.

1. Jules invests £3500 in a bank account at 4.5% compound interest per year.

   How much money is in the account after:

   a. 2 years £3 822.09   b. 5 years £4 361.64   c. 20 years? £8 441

2. The population of a city is 1.5 million. The population is expected to decrease by 6% every year.

   What is the expected population in:

   a. 2 years 1 325 400   b. 5 years 1 100 856   c. 10 years? 807 923

3. The value of a house increases by 15% a year for three years, then decreases by 7% a year for five years. The original value of the house was £250 000.

   What was the value of the house after:

   a. 4 years £353 603.44   b. 6 years £305 831.61   c. 8 years? £264 513.76

4. Abdul puts £1 250 into a new savings account. The account has an introductory offer of 1.5% interest per month for 3 months, then drops down to 0.25% per month.

   How much money is in the account after:

   a. 4 months £1 310.37   b. 1 year £1 336.80   c. 5 years? £1 507.02

5. The population of a country is 55 million. If it is decreasing by 2% per year, how many years would it take before the population drops below:

   a. 52 million 3 years   b. 47 750 000 7 years   c. 45 million? 10 years

6. Prove that a 20% increase followed by a 10% decrease is the <u>same</u> as a 10% decrease followed by a 20% increase.   1.2 x 0.9 = 0.9 x 1.2 = 1.08

   They both equal an 8% increase.

7. Which gives the biggest increase: 2% per year for 5 years or 5% per year for 2 years? $1.02^5 = 1.104$ $1.05^2 = 1.103$

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