



Gordon Burgin's Puzzles

Fractions, decimals and percentages

Using a percentage allows us to express this part-to-whole relationship as a whole number instead of as a fraction or decimal; for example "45% of the population" means we are talking about 45 out of every 100 people. In fraction form, this number would be $\frac{45}{100}$ and in decimal form it would be 0.45. All three forms tell us the same piece of information.

Not sure where to start? Help is available online.

Puzzle one

Diophantus' was a 3rd Century AD Greek mathematician from Alexandria and sometimes called "the father of algebra". Little is known of his life but one of his admirers described his life in the following classic algebraic riddle (or a fractional 'Life Span' problem).

"Diophantus' youth lasted $\frac{1}{6}$ of his life. He grew a beard after $\frac{1}{12}$ more of his life. After $\frac{1}{7}$ more of his life, Diophantus married. Five years later he had a son. The son lived exactly $\frac{1}{2}$ as long as his father, and Diophantus died just four years after his son's death. How many years did Diophantus live?"

Puzzle two

What number am I?

- I am a four-digit number.
- My thousands digit is 5 less than $\frac{1}{6}$ of the number represented by my hundreds & tens digits.
- My hundreds digit is 1.8 more than 0.025 of the number represented by my tens & units digits.
- My tens digit is 2 less than 125% of my units digit.