



# Gordon Burgin's Puzzles

## September 2022 challenges

### Challenge 1

While playing an arcade game, Tony comes across a hidden chamber that has been locked using a 5-digit password combination. Maura, the angel helping out the game character, gives the following hints:

1. The fourth digit of the password is four more than the second digit.
2. The third digit of the password is three less than the second digit.
3. The first digit is four times the last digit.
4. The sum of the third and fourth digits equal the sum of the fourth and fifth digits.
5. The total sum of the five digits equal 26.

### Challenge 2

In each of the following set of calculations, there is a common arithmetic relationship between each that allow their respective solutions to be as shown. Determine this common relationship and find the unknown relational value in question.

$$1 + 4 = 5$$

$$2 + 5 = 11$$

$$3 + 6 = 19$$

$$5 + 8 = ?$$

### Challenge 3

A perpendicular line is drawn from the top apex to the base in an equilateral triangle. The line is  $3\sqrt{3}$  inches in length. What are the perimeter and area of the triangle?