**Lesson 3: Vector Addition (Notes from http://www.science-spark.co.uk/ks5.htm)**

### Adding vectors

In one dimension:

a) + =

5N 1N 6N

b) + =

5N 1N 4N

i.e.

a) 5N + 1N = 6N

b) 5N + (-1N) = 5N – 1N = 4N

### Resultant Vectors

Finding the resultant velocity P from an object given a horizontal velocity (right) Vh and a vertical velocity (down) Vv. Firstly a vector diagram is drawn.

Vh

Vv

VR

O

P

### Finding the magnitude of P

Using Pythagoras’ theorem that the square of the 2 sides of a triangle equal the square of the hypotenuse, (a2 + b2 = c2)

Therefore:

Vh2 + Vv2 = P2

So, P = √(Vh2 + Vv2)