**Boolean Algebra Worksheet 2**

**Work Out the Logic for Each of the Following Simple Statements**

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| E.g. I will only go to the party (P) if Alex (A) and Sam (S) are going |
| (Practice answer ) P = A.S |
| Q1. The missile will be activated (M) when the key is turned (K) and the button is pressed (B) |
| M = K.B |
| Q2. I will go to the party (P) if Sam is going (S), but not Alex (A) as I don’t get on with him anymore  |
| P = S.$\overbar{A}$ |
| Q3. When the new iPhone comes out it will have a secret key combination to take selfies (S). You have to press the main button (M), the on button (O) and the volume button (V) |
| S = M.O.V |

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| Q4. I will only go outside (O) if it is sunny (S), I have an umbrella (U) or I have to put out the trash (T) |
| O = S+U+T |
| Q5. The burglar alarm will only be activated (B) when the door sensor (D) or the window sensor (W) is activated, but ONLY if the alarm system is turned on (A) |
| B = A.D+W |
| Q6. When applying to college (C) you have to choose Physics (P) and Geography (G) or History (H) |
| C = P.G+H |
| Q7. When feeding the dog (D) you must not feed it with chocolate (C) or sharp objects (S) |
| D = $\overbar{C+S}$ |
| Q8. The heating system will activate (H) when the thermostat setting has not been reached (T) |
| H = $\overbar{T}$ |