Q.2) What is the distribution of $W(s) + W(t)$ for $0 \le s \le t$?

$$W(s) + W(t) = [W(s) - W(0)] + [W(t) - W(s)] + W(s)$$

$$2[W(s) - W(0)] + [W(t) - W(s)]$$

And we know that in a Weiner distribution $W(s) - W(0)$ is independent from $(W(t) - W(s))$

$$W(s) + W(t) = 2[W(s) - W(0)] + [W(t) - W(s)]$$

$$\sim N(0, 2^2 s + (t-s))$$

$$\sim N(0, 3s + t)$$