Exercise 6.8. Do the same for the other two entangled triplet states,

$$|T_2\rangle = \frac{1}{\sqrt{2}}\left(|uu\rangle + |dd\rangle\right)$$

$$|T_3\rangle = \frac{1}{\sqrt{2}}\left(|uu\rangle - |dd\rangle\right)$$

and interpret.

See Eigenmath code.

For triplet state T_2 the expectation values are

$$\langle\sigma_z\tau_z\rangle = \langle T_2|\sigma_z\tau_z|T_2\rangle = 1$$

$$\langle\sigma_x\tau_x\rangle = \langle T_2|\sigma_x\tau_x|T_2\rangle = 1$$

$$\langle\sigma_y\tau_y\rangle = \langle T_2|\sigma_y\tau_y|T_2\rangle = -1$$

For triplet state T_3 the expectation values are

$$\langle\sigma_z\tau_z\rangle = \langle T_3|\sigma_z\tau_z|T_3\rangle = 1$$

$$\langle\sigma_x\tau_x\rangle = \langle T_3|\sigma_x\tau_x|T_3\rangle = -1$$

$$\langle\sigma_y\tau_y\rangle = \langle T_3|\sigma_y\tau_y|T_3\rangle = 1$$