Q4

a) $T_1 = \{W_1(x), R_1(x)\}$
$T_2 = \{R_2(z), W_2(x), W_2(y)\}$
$T_3 = \{R_3(x), R_3(z), R_3(y)\}$

The operation pairs that we need to focus on should be
$\{W_1(x), W_2(x)\}, \{W_1(x), R_3(x)\}, \{W_2(x), R_1(x)\}, \{W_2(x), R_3(x)\}, \{W_2(y), R_3(y)\}$

For $H_1 \; and \; H_2$, order of pair $\{W_1(x), W_2(x)\}$ is not the same, so they are not equivalent.
For $H_1 \; and \; H_3$, order of pair $\{W_2(x), R_3(x)\}$ is not the same, so they are not equivalent.
For $H_1 \; and \; H_4$, all pairs are at the same order, so they are equivalent.
For $H_2 \; and \; H_3$, order of pair $\{W_1(x), W_2(x)\}$ is not the same, so they are not equivalent.
For $H_2 \; and \; H_4$, order of pair $\{W_1(x), W_2(x)\}$ is not the same, so they are not equivalent.
For $H_3 \; and \; H_4$, order of pair $\{W_2(x), R_3(x)\}$ is not the same, so they are not equivalent.