Q1a: Need to show whether $f(x,y) = x_1y_2 - x_2y_1 + x_1y_1$ is an alternating tensor on $\mathbb{R}^4$ or not. We can verify by computation that

$$f(x,x) = x_1x_2 - x_2x_1 + x_1x_1 \neq 0$$

This function is not alternatin and thus can not be an alternating tensor.

Q1b: We need to show whether $g(x,y) = x_1y_3 - x_3y_2$ is an alternating tensor on $\mathbb{R}^4$ or not. We see that

$$g(x,x) = x_1x_3x_3x_2 \neq 0$$

This is not an alternating tensor on $\mathbb{R}^4$.

Q1c: Need to show whether $h(x,y) = (x_1)^3(y_2)^3 - (x_2)^3(y_1)^3$ is an alternating tensor on $\mathbb{R}^4$ or not. We can verify that h is not even a 2 tensor on $\mathbb{R}^4$ since

$$h(\lambda x, y) = (\lambda x_1)^3(y_2)^3 - (\lambda x_2)^3(y_1)^3 = \lambda^3 h(x,y)$$

This function fails homogeneity and thus is not a tensor, much less an alternating tensor.