

- Sec 14.1:

[4] Given the domain of each function.

$$Z = \frac{x+y^2}{\sqrt{x}}$$

→ $x \geq 0$ لأنه لا يمكن أن يكون الجذر التربيعي سالباً

∴ Domain: $\{(x, y) ; x \geq 0, y \in \mathbb{R}\}$

[6] $Z = \sqrt{x-y}$

→ D: $x-y \geq 0$

∴ $x \geq y$

Domain: $\{(x, y) ; x \geq y\}$

[9] Evaluate the functions at the given values: -

$$Z = x^3 + 4xy + y^2 ; x=1, y=-1$$

$$\begin{aligned} \rightarrow Z &= (1)^3 + 4(1)(-1) + (-1)^2 \\ &= \boxed{-2} \end{aligned}$$

[14] $C(x_1, x_2) = 500 + 5x_1 + 7x_2 ; x_1 = 200, x_2 = 300.$

$$\begin{aligned} \rightarrow C &= 500 + 5(200) + 7(300) \\ &= \boxed{3600} \end{aligned}$$