

$f(x) = \{(1,0), (2, \sqrt{2}), (4,0)\}$ $h(x) = \frac{f(x)}{g(x)} = \{(1,0), (2, \frac{\sqrt{2}}{2}), (4,0)\}$	٦
الف $= \mathbb{R} \rightarrow$ <u>توان سوم دارم</u> $\rightarrow (x-1)^3 + 1 = y \quad y-1 = (x-1)^3$ $x-1 = \sqrt[3]{y-1} \rightarrow x = 1 + \sqrt[3]{y-1} \quad R_f = \mathbb{R}$ ب) $yx^2 - 2ym = 1 \rightarrow yx^2 - 2ym - 1 = 0 \rightarrow x = 2y \pm \sqrt{4y^2 - 4y}$ $4y^2 - 4y \geq 0 \rightarrow y^2 + y \geq 0 \rightarrow y(y+1) \geq 0 \quad \frac{-1 \pm 1}{2}$ $R_f = (-\infty, -1] \cup [0, +\infty)$	٧
الف $\rightarrow \min \rightarrow x = \frac{4}{y} = 2, y = 4 \quad R_f = [4, +\infty)$ ب) $\max \rightarrow x = \frac{-4}{-2} = 2, y = 12 \quad R_f = (-\infty, 12]$ ج) $\min \rightarrow x = \frac{4}{y} = 2 \rightarrow y = -4 \quad [-4, +\infty) \xrightarrow{\sqrt{\quad}} [0, +\infty)$ د) $\max \rightarrow \frac{-4}{-2} = 2, y = 9 \quad (-\infty, 9] \xrightarrow{\sqrt{\quad}} [0, 3]$	٨
الف $= \mathbb{R}$ ب $= \mathbb{R}$ ج) $\mathbb{R} \xrightarrow{\sqrt{\quad}} [0, +\infty)$ د) $\rightarrow \mathbb{R} \xrightarrow{\text{توان دو}} [0, +\infty)$	٩
الف) $\mathbb{R} - \{3\}$ ب) $\mathbb{R} - \{2\}$	١٠