Name: Promes Day Lapion

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1. $P(x) = \sqrt{4x - x^2}$

$D_F = \{x \in R \mid F(x) \in R\}$
$= \{x \in R \mid \sqrt{4x - x^2} \in R\}$
$= \{x \in R \mid 0 \leq x \leq 4\}$
$= [0, 4]$

$P_F = \{F(x) \in R \mid x \in [0,4]\}$
$= \{\sqrt{4x - x^2} \in R \mid 0 \leq x \leq 4\}$
$= \{y \in R \mid 0 \leq y \leq 2\}$
$= [0, 2]$
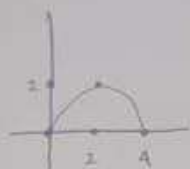
2. $F(x) = \dfrac{x-1}{x+3}$

$D_F = \{x \in R \mid F(x) \in R\}$
$= \{x \in R \mid \dfrac{x-1}{x+3} \in R\}$
$= \{x \in R \mid x < -3 \text{ atau } x > -3\}$
$= (-\infty, -3) \cup (-3, \infty)$

$P_F = \{F(x) \in R \mid x \in (-\infty, -3) \cup (-3, \infty)\}$
$= \{\dfrac{x-1}{x+3} \in R \mid x < -3 \text{ atau } x > -3\}$
$= \{y \in R \mid y < 1 \text{ atau } y > 1\}$
$= (-\infty, 1) \cup (1, \infty)$

3. $F(x) = \sqrt{x^2 - 4}$

$D_F = \{x \in R \mid F(x) \in R\}$
$= \{x \in R \mid \sqrt{x^2 - 4} \in R\}$
$= \{x \in R \mid x \leq -2 \text{ atau } x \geq 2\}$

$P_F = \{F(x) \in R \mid x \in (-\infty, -2) \cup [2, \infty)\}$
$= \{\sqrt{x^2 - 4} \in R \mid x \leq -2 \text{ atau } x \geq 2\}$
$= \{y \in R \mid y \geq 0\}$
$= [0, \infty)$

4. $F(x) = 1 - \sqrt{x - 4}$

$D_F = \{x \in R \mid F(x) \in R\}$
$= \{x \in R \mid 1 - \sqrt{x - 4} \in R\}$
$= \{x \in R \mid x \geq 4\}$
$= [4, \infty)$

$P_F = \{F(x) \in R \mid x \in [4, \infty)\}$
$= \{1 - \sqrt{x - 4} \in R \mid x \geq 4\}$
$= \{y \in R \mid y \leq 1\}$
$= (-\infty, 1]$

5. $F(x) = \dfrac{1}{x^2}$

$D_F = \{x \in R \mid F(x) \in R\}$
$= \{x \in R \mid \dfrac{1}{x^2} \in R\}$
$= \{x \in R \mid x < 0 \text{ atau } x > 0\}$
$= (-\infty, 0] \cup (0, \infty)$

$P_F = \{\dfrac{1}{x^2} \in R \mid x < 0 \text{ atau } x > 0\}$
$= \{y \in R \mid y > 0\}$
$= (0, \infty)$