تکلیف شماره ۸ — دنیای حسابی — یازدهم ریاضی C

① $f(x)=\sqrt{1-x^2}$ $\quad 1-x^2\geq 0 \quad x^2\leq 1 \quad -1\leq x\leq 1$

$g=\{(-1,1)\ (0,4)\ (2,0)\ (1,2)\}$ $\quad \{(-1,2)(0,3)(1,4)\}$

$2g-3f$ $\quad 2+3+4=11$

② $f(x)=2x-1 \quad x\geq 3 \rightarrow [5,+\infty) \quad g(x)=\frac{1}{3}x+3 \quad x\leq 3$

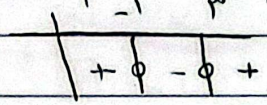
$Df:[3,+\infty) \quad 2x\geq 6 \quad 2x-1\geq 5 \quad Dg:(-\infty,3] \quad \frac{1}{3}x\leq 1 \quad \frac{1}{3}x+3\leq 4$

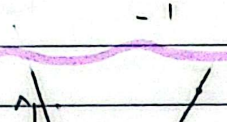
$R_f\cup R_g=[5,+\infty)\cup(-\infty,4]$

③ $y=\frac{-x^2}{2}+x+3 \quad -\frac{1}{2}x^2+x+3\geq\frac{3}{2} \quad x^2-2x-3\leq 0$

$(a,b)\rightarrow \geq\frac{3}{2} \quad \sqrt{b-ac}\ ? \quad -x^2+2x+6\geq 3 \quad (x+1)(x-3)\leq 0$

$\sqrt{4}=2$





④ $y=\frac{|x-1|}{1}+\frac{|x-3|}{3}+\frac{|2x-4|}{2}$

$x=1\rightarrow 4 \quad x=2\rightarrow 2 \quad x=3\rightarrow 4 \quad x=4\rightarrow 8$

$\min=2$

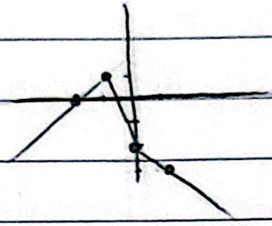
s.a.m

(5)

$y = |x| - 2|x+1|$

$x=-1 \to 1$ $x=0 \to -2$

$x=-2 \to 0$ $x=1 \to -3$



$R_f = (-\infty, 1]$

(6)

$y = \dfrac{x^2+5x+m}{x+1} \longrightarrow R_f = \mathbb{R}$

$yx + y = x^2 + 5x + m$

$x^2 + (5-y)x + m - y = 0$

$\Delta = 25 + y^2 - 10y - 4(1)(m-y)$

$y^2 - 6y + 25 - 4m \geq 0 \longrightarrow \Delta \leq 0$

$\Delta = 36 - 4(25 - 4m)$ → $14m - 64$

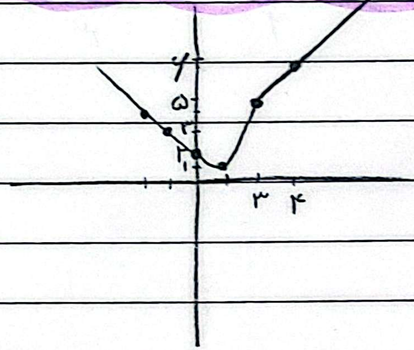
$-(100 - 16m)$

$16m - 64 \leq 0$ $16m \leq 64$

$m \leq 4 \to$ m عدد صحیح

(7)

$f(x) = \begin{cases} x+2 & ; x \geq 3 \\ x^2 - 2x + 2 & ; 0 \leq x < 3 \\ |x| + 2 & ; x < 0 \end{cases}$

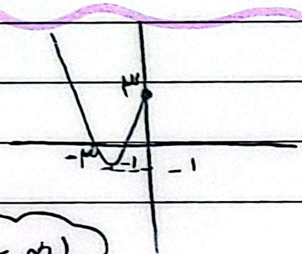


$R_f = [1, +\infty)$

(8)

$f(x) = \begin{cases} x^2 + 4x + 3 & ; x \leq 0 \\ [2x] - 2x & ; x > 0 \end{cases}$

$(-1, 0]$



$R_f = [-1, +\infty)$

s.a.m

$y = a+1-\sqrt{2x+3} \geq 0 \qquad 2x \geq -3 \qquad x \geq -\frac{3}{2}$ ⑨

$D = [-\frac{3}{2}, +\infty) \qquad R = (-\infty, \omega] \qquad ab = ? \qquad \rightarrow 4^2 x - \frac{3}{2} = -4$

$\hookrightarrow a+1 = \omega \qquad a = 4$

$f(x) = 2\sqrt{x+1} + 4\sqrt{1-x}$ ⑩

$f(x) + g(x) = 3\sqrt{2+2\sqrt{1-x^2}}$

$Df = Dg \qquad y = \frac{f(x)}{4} - \frac{g(x)}{3}$

s.a.m