نام و نام خانوادگی سیده هانیه عابا ..... 20 ..... پاسخنامه تشریحی تکلیف شماره ..7.. کلاس یازدهم دختر ..A..

1

$y=-\frac{1}{3}x^2+\frac{2}{5}x+1 \longrightarrow x_s=4,\ y_s=3$

$a=-\frac{1}{3}$ پس معادله جدید به صورت زیر است :

$-\frac{1}{3}(x-x_s)^2+y_s=-\frac{1}{3}(x-4)^2+3$

$-\frac{1}{3}(x-4)^2+3=0 \Rightarrow (x-4)^2=9 \rightarrow x-4=3 \rightarrow x=7$

$\searrow x-4=-3 \Rightarrow x=1$

2

2

$f(x)=a(x+1)+(x-3) \xrightarrow{(1,4)} f(x)=-x^2+2x+3$

$f(3x+2)=-(3x+2)^2+2(3x+2)+3=-(9x^2+12x+4)+6x+4+3$

$f(3x+2)=-9x^2-6x+3 \qquad 2f(3x+2)=-18x^2-12x+6$

$1-2f(3x+2)=18x^2+12x-5$

$x_s=\frac{-b}{2a}=\frac{-12}{36}=\frac{-1}{3} \qquad y_s=18\times\frac{1}{9}+12\times(-\frac{1}{3})-5=-7 \qquad \alpha\beta=\frac{-1}{3}\times-7=\frac{7}{3}$

2-4-5

2

3

$y=3-\sqrt{2x} \longrightarrow y=3-\cancel{3}\sqrt{2(x+1)} \Rightarrow y=3-\sqrt{2x+2} \longrightarrow y=\sqrt{2x+2}-3$

$y=\sqrt{2x+2}+2 \qquad \sqrt{2x+2}+2=\frac{7}{2} \Rightarrow \sqrt{2x+2}=\frac{3}{2} \Rightarrow$

$2x+2=\frac{9}{4} \Rightarrow 2x=\frac{1}{4} \Rightarrow x=\frac{1}{8}$

2

4

$D_{f(x)}=(a,4] \longrightarrow D_{f(x-1)}=(a+1,5]$

$D_{g(x)}=[-1,b) \rightarrow D_{f(x+1)}=[-2,b-1)$

$(a+1,5]\cap[-2,b-1)=(-2,5)$

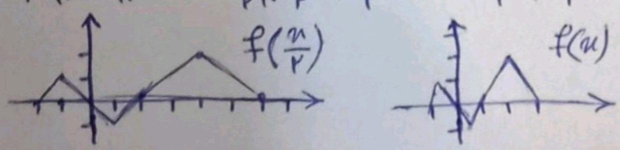
$a+1=-2 \Rightarrow a=-3$

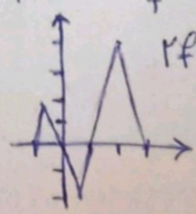
$b-1=5 \Rightarrow b=6 \qquad a-b=-9$

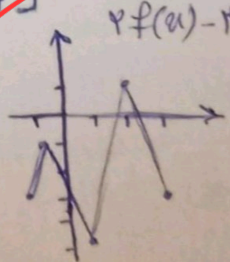
2

5

$-3\le x\le 5 \rightarrow -\frac{3}{2}\le\frac{x}{2}\le\frac{5}{2} \rightarrow -\frac{1}{2}\le\frac{x}{2}+1\le\frac{7}{2} \Rightarrow D_f=[-\frac{1}{2},\frac{7}{2}]$



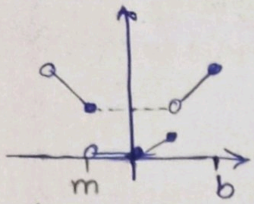




$R_f=\sqrt{[0,5]}=[0,\sqrt{5}]$

2

6



$y = \frac{x}{a}[ax]$

$(m,0]$

$\frac{m}{a}[am] = \frac{1}{4}$ ① $(m,0] \Rightarrow [am] = 0$ $0 \leq ax < 1 \Rightarrow ax \in [0, am)$

$-\frac{x}{2}[-2x]$ $0 \leq x < \frac{1}{2}$

$\frac{1}{2} \leq x < 1 = b$ ← دومین بازه

$\Rightarrow am = 1$ ②   ①,② $\Rightarrow \frac{m}{a} = \frac{1}{4} \Rightarrow a = 4m$ $\left(a = \frac{1}{m}\right)$ $\Rightarrow m^2 = \pm\frac{1}{2}$

$m = -\frac{1}{2}$

$a = -2$

$b = 1$ $b - a = 3$ ✓

m عددی منفی است پس $+\frac{1}{2}$ غ ق ق است

2

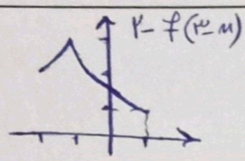
7

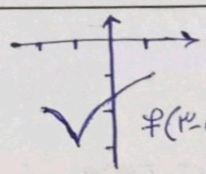
$f(x) = \log_2 x \rightarrow \log_2 (x+2) \rightarrow -\log_2 (x+2) \rightarrow -\log_2 (x+2) + 3 \rightarrow -\log_2 (-x+2) + 3$

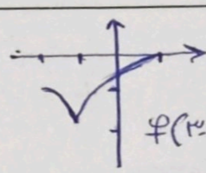
$g(-14) + g(-62) = \underbrace{-\log_2 16}_{-4} + 3 \underbrace{-\log_2 64}_{-6} + 3 = -4$ ✓

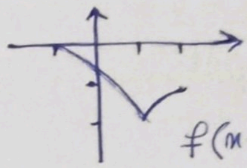
2

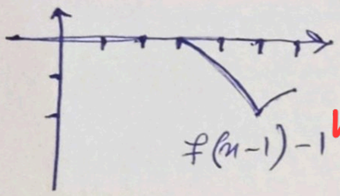
8











✓

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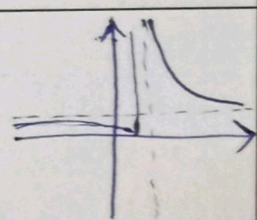
9

$\left|\frac{x+1}{2x+1}\right| \rightarrow \left|\frac{x-1}{2x-3}\right| \rightarrow \left|\frac{x-1}{2x-3}\right| + 1$ $\left|\frac{x-1}{2x-3}\right| + 1 + x < 0$



1, $\frac{3}{2}$: $+ \,|\, - \,|\, +$

$\frac{x-1}{2x-3} + 1 + x < 0$ $\frac{x - 1 + 2x^2 - x - 3}{2x-3} < 0$

$\frac{2x^2 - 4}{2x-3} < 0$ $-\sqrt{2}$, $\sqrt{2}$, $\frac{3}{2}$: $- \,|\, + \,|\, - \,|\, +$ $\Rightarrow (-\infty, -\sqrt{2})$ ✓

2

10

$\sqrt{28f(x) - f^2(x)}$ $28f(x) - f^2(x) \geq 0 \Rightarrow 28f(x) \geq f(x)f(x) \xrightarrow{f(x) > 0} 28 \geq f(x)$

و $f(x)$ نمی‌تواند منفی باشد زیرا $28f(x)$ منفی و $f^2(x)$ مثبت می‌شود و $\ominus > \oplus \Rightarrow$ غ ق ق

$28 \geq f(x) \Rightarrow x = 0, 1, 2$ 3 عدد صحیح ✓

$f(x) = \frac{27}{8}(x-2)^3 + 27$ $28 = \frac{27}{8}(x-2)^3 + 27 \Rightarrow 1 = \frac{27}{8}(x-2)^3 \Rightarrow \frac{8}{27} = (x-2)^3$

$(x-2) = \frac{2}{3} \Rightarrow x = \frac{8}{3}$ ✓

2