SUBJECT: ..... ۲۰ پاسخ آزمایشی

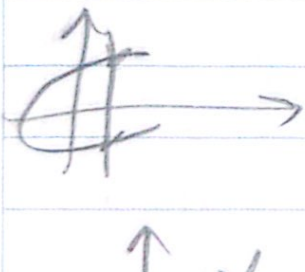
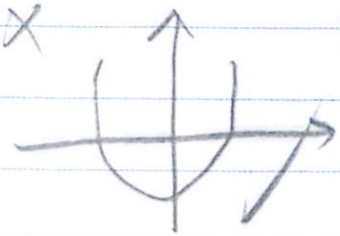
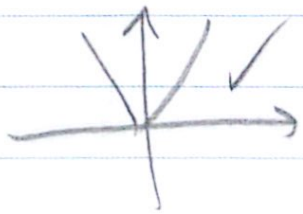
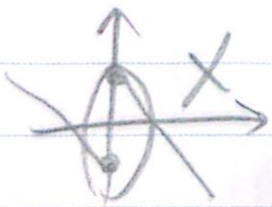
الف) $9 = 3x - y \rightarrow y = 3x - 9$
$-5 = x + 2y \rightarrow y = \frac{-5-x}{2}$
$\rightarrow 7x = 14 \quad x = 2 \quad y = -3$ ۳

ب) $\frac{1}{x} - \frac{1}{y} = \frac{y-x}{xy} = -1 \rightarrow 3y - 3x = -3xy \rightarrow xy = \frac{1}{2}$
$\frac{5}{x} - \frac{7}{y} = \frac{5y-7x}{xy} = -3 \rightarrow 5y - 7x = -3xy$ ۲

$(1, a+1)$
$(1, -2)$
$\rightarrow a+1 = -2 \rightarrow a = -3$
$f = \{(-3,-9)\ (1,-2)\ (1,-2)\ (2,b)\}$
$-9 + 2b = f(a) + 2f(2) = 3f(1) = 9$
$2b = 0 \rightarrow b = 0$ ۳

$m^2 - 3m = -2$
$(m-1)(m-2) = 0$
$m = 2 \quad m = 1$

$f = \{(-1,-2)(3,a)\ (-1,-2)$
$m=1 \rightarrow (2,9)\ (3,5)\ (3,a)\}$ ۳
$m=2 \rightarrow f = \{(-1,-2)(3,a)(-1,-2)$
$(3,4)\}$ ✗
هیچ مقدار





۴

Hirmandpaper

SUBJECT : .....

۵) الف) $y_1 = -\sqrt{x_1+1}$, $y_2 = -\sqrt{x_2+1}$ $\xrightarrow{x_1=x_2}$ $y_1 = y_2$ است تابع

ب) $x = \frac{y}{\sqrt{1-y^2}} \rightarrow \frac{y_1}{\sqrt{1-y_1^2}} = \frac{y_2}{\sqrt{1-y_2^2}} \rightarrow$

$y_1^2 - y_1 y_2^2 = y_2^2 - y_1^2 y_2 \Rightarrow y_1 = y_2$ است تابع

۶) $|۳|=۳$, $|-۳|=۳$ ✗ تابع

$y_1^3 + ۳y_1^2 + ۳y_1 = y_2^3 + ۳y_2^2 + ۳y_2 \rightarrow$

$y_1^3 - y_2^3 = ۳y_2^2 + ۳y_2 - ۳y_1^2 - ۳y_1 \Rightarrow$

$(y_1-y_2)(y_1^2+y_1y_2+y_2^2) + ۳(y_1-y_2)(y_1+y_2+1) = 0$

$(y_1-y_2)(y_1^2+y_1y_2+y_2^2+۳y_1+۳) = 0 \rightarrow$

$y_1^2 + y_1(y_2+۳) + y_2^2 + ۳y_2 + ۳ = 0$

$\Delta = -۳(y_2+1)^2 \Rightarrow \Delta \leq 0$ $\rightarrow \Delta < 0$ ✓ تابع

$\rightarrow \Delta = 0 \rightarrow y_2 = -1 \rightarrow y_1 = -1$

۷) $f(x) = \frac{x^2+۴x+۴+1}{x^2+۴x+۴+۳} = \frac{(x+۲)^2+1}{(x+۲)^2+۳}$ جابجایی $\rightarrow \frac{۴}{۳} = \frac{۴}{۳}$

۸) $f(x) = x^3 + ax + b$, $y = ۳x - a$ $\xrightarrow{(-1,-۴)}$ $-۴ = -1 - a + b$, $-۴ = -۳ - a$ $\rightarrow$

$a = +1$

$b = -۲$

$x^3 + x - ۲ = ۳x - 1 \Rightarrow x^3 - ۲x - 1 = 0 \rightarrow$

$x(x-1)(x+1) - (x+1) = 0 \rightarrow (x+1)(x^2-x-1) = 0$

$x = -1$ یا $\rightarrow \frac{-b}{۲a} = 1$

Hirmandpaper

SUBJECT : .....

$a+b=2a \rightarrow a=b$ ✓ 19

$a-2b+1=2a$

$a-2a+1=2a \longrightarrow a=\frac{1}{3}$

✓ 20

$$f(x)=\frac{4x^2-ax+c+1}{bx+3}=x$$

$4x^2-ax+c+1=bx^2+3x \rightarrow \underbrace{(4-b)}_{4=b}x^2-\underbrace{(a+3)}_{a=-3}x+\underbrace{c+1}_{c=-1}=0$

$a+b+c=0$