

بسم الله الرحمن الرحيم

$$1) f = u + [u] = y$$

$$\hookrightarrow [u + [u]] = [y]$$

$$[u] + [u] = [y] \Rightarrow [u] = \frac{[y]}{2}$$

$$\hookrightarrow f = u + \frac{[y]^2}{2} = y$$

$$\Rightarrow f'(u) = y + \frac{[u]}{2}, u$$

$$y = u - \frac{[u]}{2}$$

$$ii) u - \frac{[u]}{2} = u + [u]$$

$$\Rightarrow 0 = [u] + \frac{[u]}{2} \rightarrow 2[u] + [u] = 0$$

$$3[u] = 0$$

$$\Rightarrow [u] = 0$$

$$\Rightarrow u \in [0, 1)$$

النتيجة

ii)

• AVANGE

$\Rightarrow u$

Subject:

Date:

Day:

Time:

$$2) \quad y = \frac{ax + p}{bx + c} \rightarrow bx + c = 0$$

$$bx = -c \Rightarrow x = \frac{-c}{b}$$

جانب قائم = $\frac{a}{c}$ جانب

نقطه قرار = $y = x \Rightarrow \left(\frac{a}{c}, \frac{a}{c}\right) = \left(\frac{-b}{c}, \frac{-b}{c}\right)$

$$\Rightarrow \frac{a}{c} = \frac{-b}{c} \Rightarrow a = -b$$

ج. $\frac{-bx + p}{bx + c} \quad b + (-b) = 0$

$\Rightarrow$ $\frac{p}{b} = \frac{-b}{b} \Rightarrow \frac{p}{b} = -1$

$$3) \quad f(x) = \frac{ax + p}{bx + c} = y$$

$$\Rightarrow f^{-1}(x) = \frac{(bx + c)x - p}{ax + p}$$

$$\Rightarrow f^{-1}(x) = \frac{(bx + c)x - p}{ax + p}$$

$$\Rightarrow \frac{ax + p}{bx + c} = \frac{(bx + c)x - p}{ax + p}$$

$$\Rightarrow 0 = (bx + c)(ax + p) - (ax + p)^2$$

$$x \rightarrow -9 \quad \Rightarrow \frac{-4x - p}{bx + c}$$

$$\frac{1}{a} + \frac{1}{b} = \frac{a+b}{ab} \Rightarrow \frac{(4x + p)}{-9} = \frac{p(4x + 1)}{-9}$$

AVANGE

$$\Rightarrow \frac{4x + 1}{-9} = \frac{p(4x + 1)}{-9}$$

Subject:

Date:

Day:

Time:

$$f(x) = |rx + b| - |bx - r|$$

$rx = -b \Rightarrow x = -\frac{b}{r} = -1/0$

$bx = r \Rightarrow x = \frac{r}{b} = 0,6$

$rx + b$	$bx + r$	$-rx + r$
----------	----------	-----------

$x \in \mathbb{R} \Rightarrow R = (-\infty, +\infty)$

$$Df' = Rf$$

$$y = -rx + r \Rightarrow \frac{y - r}{-r} = x \Rightarrow y = \frac{r - x}{r}$$

$$D = (-\infty, +\infty)$$

$$b) y = r f(rx) - 1 \Rightarrow \frac{y + 1}{r} = f(rx)$$

$$\Rightarrow f^{-1} \Rightarrow f^{-1}\left(\frac{y + 1}{r}\right) = rx$$

$$\frac{f^{-1}\left(\frac{y + 1}{r}\right)}{r} = x = g^{-1}(y)$$

$$a = \frac{1}{r} / b = 1 / c = r / d = 1$$

$$\frac{ac + d}{rb} = \frac{r}{1} = \frac{1}{r}$$

Subject:

Date:

Day:

Time:

4) $f(x) = x + \sqrt{x}$

$x \geq 1 \Rightarrow D = [1, +\infty)$
 $x \geq 0 \Rightarrow R = [0, +\infty)$

$y = x + \sqrt{x} + 1 - 1$

$\hookrightarrow x(\sqrt{x}) = (\sqrt{x} + 1)^p - 1$

$\Rightarrow x = (\sqrt{y+1})^p - 1$

$\Rightarrow x+1 = (\sqrt{y+1})^p \Rightarrow \sqrt{x+1} = \sqrt{y+1}$

$\sqrt{x+1} - 1 = \sqrt{y}$

$\Rightarrow y = (\sqrt{x+1} - 1)^p$

$D = [0, +\infty)$

$R_{f(x)} = D_{g^{-1}(x)}$

5) $y = x - 1 + \sqrt{x}$

$x - 1 + \sqrt{x} = x$

$\Rightarrow \sqrt{x} = 1 \Rightarrow x = 1$

Subject:

Date:

Day:

Time:

$$\sqrt{x} + \sqrt{y} = 1$$

(10)

$$\sqrt{y} = 1 - \sqrt{x} \Rightarrow y = (1 - \sqrt{x})^2$$

$$x \in [0, 1] \quad y \in [0, 1]$$

$$R = D \Rightarrow f^{-1} = f \Rightarrow \text{Involution} \Rightarrow x = y$$

