№3

1. $0.(216) = t = \frac{8}{37}$

а) $1000t = 216.(216) = 216 + t$

$999t = 216 \Rightarrow t = \frac{216}{999} = \frac{72}{333} = \frac{24}{111} = \boxed{\frac{8}{37}}$

б) $1.0(01) = \frac{991}{990}$

$0.0(01) = g \Rightarrow 10g = 0,(01)$

$1000g = 1 + g \cdot 10$

$990g = 1 \Rightarrow g = \frac{1}{990} \Rightarrow 1 + \frac{1}{990} = \frac{991}{990}$

2*

$x = \frac{2}{21}$

$\boxed{x_{10} = \frac{2}{21}}$

$x_{21} = 0,2$

$x_k = 0,(13) = y$.

$y \cdot k^2 = 13 + y$

$y(k^2 - 1) = 13$

$y = \frac{13}{k^2-1}$ { 13 в k-системе } $\Rightarrow$

$k + 3$,

k - размер разряда

$\frac{k+3}{k^2-1} = \frac{2}{21}$

$2k^2 - 2 = 21k + 63$

$2k^2 - 21k - 65 = 0$

$k^2 - \frac{21}{2}k - \frac{65}{2}$

$k_1 \cdot k_2 = -\frac{65}{2}$

$k_1 + k_2 = \frac{21}{2}$

$k_1 = \frac{26}{2} = \boxed{13}$; $k_2 = \cancel{(-\frac{5}{2})}$ Ответ: $\underline{k = 13}$

№3

а) $(A \vee B) \to (B \vee \bar{A})$

A	B	$A \vee B$	$B \vee \bar{A}$	$(A \vee B) \to (B \vee \bar{A})$
0	0	0	1	1
0	1	1	1	1
1	0	1	0	0
1	1	1	1	1

и тавтология.

в) $A \to (A \vee (\bar{B} \wedge \bar{A}))$

A	B	$\bar{B} \wedge \bar{A}$	$A \vee (\bar{B} \wedge \bar{A})$	$A \to (A \vee (\bar{B} \wedge \bar{A}))$
0	0	1	1	1
0	1	0	0	1
1	0	0	1	1
1	1	0	1	1

Или $A \to A$

Тавтология