



$\text{ii) } -\sqrt{n+1}$ 

 $\rightarrow \dots \rightarrow n = \frac{y}{\sqrt{1-y^2}}$ 
④

$1-y^2 > 0 \rightarrow 1 > y^2 \rightarrow y = 0$   
 $\rightarrow n = \frac{0}{1} = 0$

$\text{iii) } |y| = n \xrightarrow{n=2} |y| = 2 \rightarrow y = \pm 2$ 
⑦

$\rightarrow y^2 + 2y^2 + 2y + n^2 + n = 0 \rightarrow y(y^2 + 2y + 2) + \frac{n(n+1)}{0} = 0$ 
⑦

$f(n) = \frac{n^2 + 2n + 2}{2^2 + 2n + 2} = \frac{n^2 + 2n + 2 - 2}{2^2 + 2n + 2} = \frac{n^2 + 2n}{2^2 + 2n + 2} = 1 - \frac{2}{n^2 + 2n + 2}$ 
⑦

$2^2 + 2n + 2 \xrightarrow{n=(\sqrt{2}-2)}$ 
 $(\sqrt{2}-2)^2 + 2(\sqrt{2}-2) + 2 = 2 + 2\sqrt{2} - 4 + 2\sqrt{2} - 4 + 2 = 4\sqrt{2} - 4 = 4(\sqrt{2}-1)$   
 $\rightarrow f(\sqrt{2}-2) = 1 - \frac{2}{4(\sqrt{2}-1)} = \frac{2}{2(\sqrt{2}-1)}$

$\text{iv) } a+b=2a \rightarrow a=b \rightarrow a \cdot b + 1 = a \cdot a + 1 = 1 - a = 2a$ 
⑨

$\rightarrow a = 1 \rightarrow a = \frac{1}{2}$

$y = \frac{cn^2 - an + c + 1}{bn + c} = n \rightarrow cn^2 - an + c + 1 = bcn^2 + cn$ 
⑩

$\rightarrow a + b + c = c - c - 1 = 0$

$\rightarrow b = c$   
 $\rightarrow -a = c \rightarrow a = -c$   
 $c + 1 = 0 \rightarrow c = -1$



$$f(x) = x^r + ax + b \quad \frac{n-1}{y=-x} \rightarrow -1 - a + b = -x$$

$$y^r + ax + a = 0 \quad \frac{n-1}{y=-x} \rightarrow r + a = x \rightarrow -x - a = -x$$

$$\rightarrow x^r + x - x = x^{r-1} \rightarrow x^r - x^{r-1} = 0 \rightarrow x^r = x^{r-1} + 1$$

$$\left. \begin{array}{l} -1 - a + b = -x \\ b = -x - a \end{array} \right\} = -x$$

$$-1 - a + b = -x - a$$

$$b = -x - a \rightarrow a = 1$$