Spec(A) で

$$V(S_1) \cup V(S_2) = V(\underbrace{S_1 \cdot S_2}_{\{fg \mid f \in S_1,\ g \in S_2\}})$$

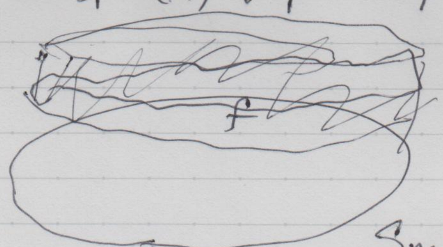
$$\text{Spec}(A) = \underbrace{U}_{\text{open}} \cup V \qquad U \cap V = \emptyset$$

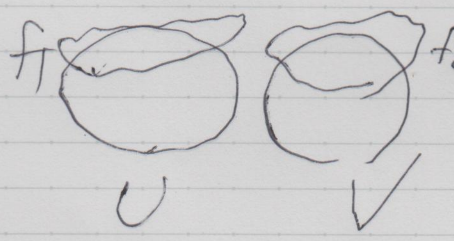
$$\Rightarrow \quad A \cong \underset{\mathcal{O}_X(U)}{\underset{\shortparallel}{A_1}} \times \underset{\mathcal{O}_X(V)}{\underset{\shortparallel}{A_2}}$$

A は Spec A 上の sheaf $\mathcal{O}_{\text{Spec}A}$ の section

$$A = \mathcal{O}_{\text{Spec}(A)}(\text{Spec}\,A)$$

$f \in A$





$$\underset{A}{\underset{\cap}{f}} \longleftrightarrow \underset{\mathcal{O}_X(U) \times \mathcal{O}_X(V)}{\underset{\in}{(f_1, f_2)}}$$

$\mathrm{Spec}(A) = \underbrace{U \cup V}_{\text{open}}$ $U \cap V = \phi$ かつ

$$\begin{cases} U = V(I) \\ V = V(J) \end{cases}$$

$U \cup V = V(I) \cup V(J)$

$= V(I \cdot J)$

$\rightarrow \boxed{I \cdot J = 0}$

$\phi = U \cap V = V(I+J)$

$\Rightarrow \boxed{I+J = A}$

exercise 11 C

$\exists e, f \in A$ s.t.
$e \in I$ $f \in J$
$e + f = 1$, $ef = 0$

$(e^2 = e, f^2 = f)$

— 9:35 休けい

$V(S)$ は
Sで生成されるAの ideal I
を用いて $V(I)$ と一緒
$V(S) = V(I)$ になる

Exercise 11. A

$(S) = I \Rightarrow V(S) = V(I)$

Exercise 11. B

$\underbrace{V(I) = V(J)}_{\text{Aの ideal}} \Rightarrow \underbrace{\sqrt{I} = \sqrt{J}}_{I, J\text{の根基}}$

根基.

$$(1-aT^n)_W(1-bT^m)_W$$

$$(1-\sqrt[n]{a}\,T)_W\cdot(1-T^n)_W\cdot(1-\sqrt[m]{b}\,T)_W\cdot(1-T^m)$$

$$=(1-\sqrt[n]{a}\sqrt[m]{b})(1-T^n)_W(1-T^m)_W$$

$$=(1-a^{\frac{l}{n}}b^{\frac{l}{m}}T^l)^d$$

$$(1-T^n)_W(1-T^m)_W$$

$$=\prod_{k=0}^{n-1}(1-\zeta_n^k T)_W(1-T^m)_W$$

$$=\sum_{k=0}^{n-1}(1-\zeta_n^{km}T^m)_W$$

$$n=n'd \quad m=m'd$$

$$=\sum_{k=0}^{n-1}(1-\zeta_{n'}^{km'}T^{m'd})$$

$$\sum_{k=0}^{n'-1}(1-\zeta_{n'}^{k}T^{m'd})^d$$

$$=(1-T^{n'm'd})^d$$

$$=(1-T^l)^d$$

おもいだした問題解答

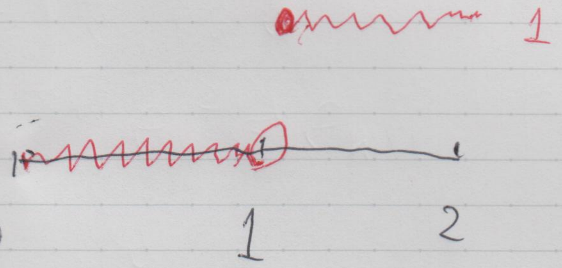
貼り合わせ

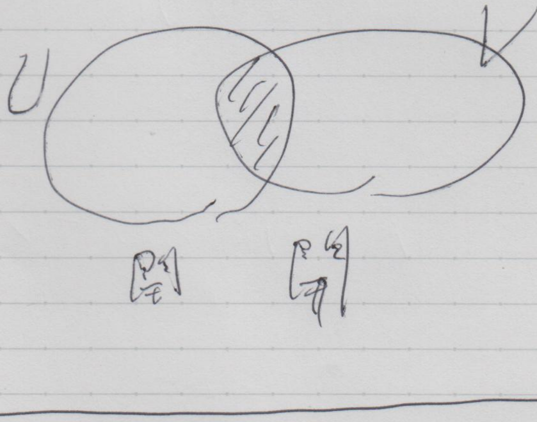
$X = U \cup V$　　$f: U \to Y$ cont.
　　　　　　　　$g: V \to Y$

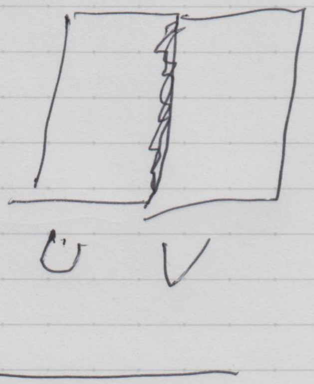
$f, g : U \cap V$ で等しい $\Rightarrow$ $\exists!$
f, g は貼り合わせ.

$X = [0,2]$

$U = [0,1)$ 開, $V = [1,2]$ 閉　$Y = R$







$\mathfrak{P}$　　¥frak{P}　　¥mathfrak{P}

・ n : Aで可逆 ⇒ $\Lambda(A)$で可逆

$\mathbb{Z}_{>0}$

⇕ $(1-T)_w = (f)_w^n = (f^n)_w$

となる f が存在.

・

$$(1-T)_w = (f^n)_w$$

$$f = (1 - aT + \cdots)$$

$$\Rightarrow f^n = (1 - naT + \cdots)$$

$$\rightarrow f = \left(1 - \frac{1}{n}T + \cdots\right)$$

逐次近似

(Exercise)