

"Initiation"

年

月

日

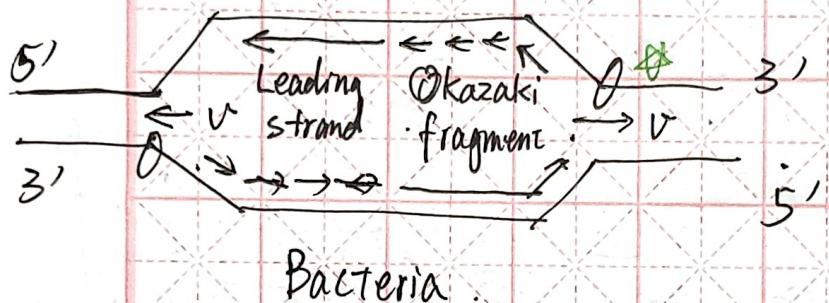
* Determine Where to Start.
replication origin $\times 1$
 $\text{Ori} \times n$

A T rich sequence

initiator protein

"Elongation"

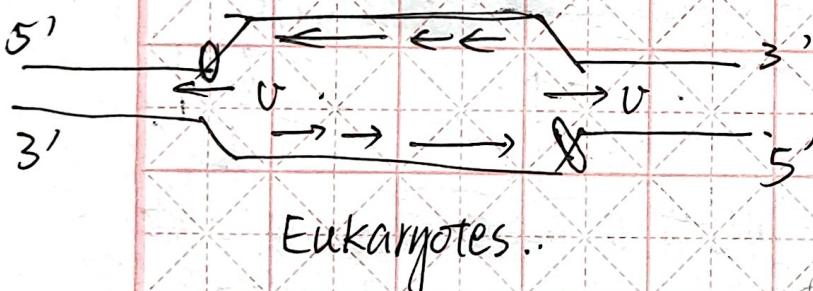
* Replication fork \rightarrow bubble.



DNA helicase $\leftarrow 5'-3'$
 $3'-5'$

template DNA.

New DNA \leftarrow Leading strand
Lagging strand



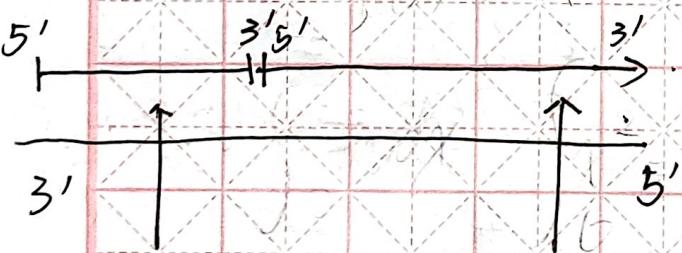
single strand DNA binding protein

SSB., in E.coli

RPA, in Eukaryotes.

Asymmetrical

Asymmetrical



RNA primer . new DNA .

(RNA polymerase)

DNA primase, in E.coli

DNA pol. α (DNA primase), in Eukaryotes.

pol II, in E.coli

pol ϵ : leading strand.

δ : lagging strand

(Okazaki fragment)

10x15=150

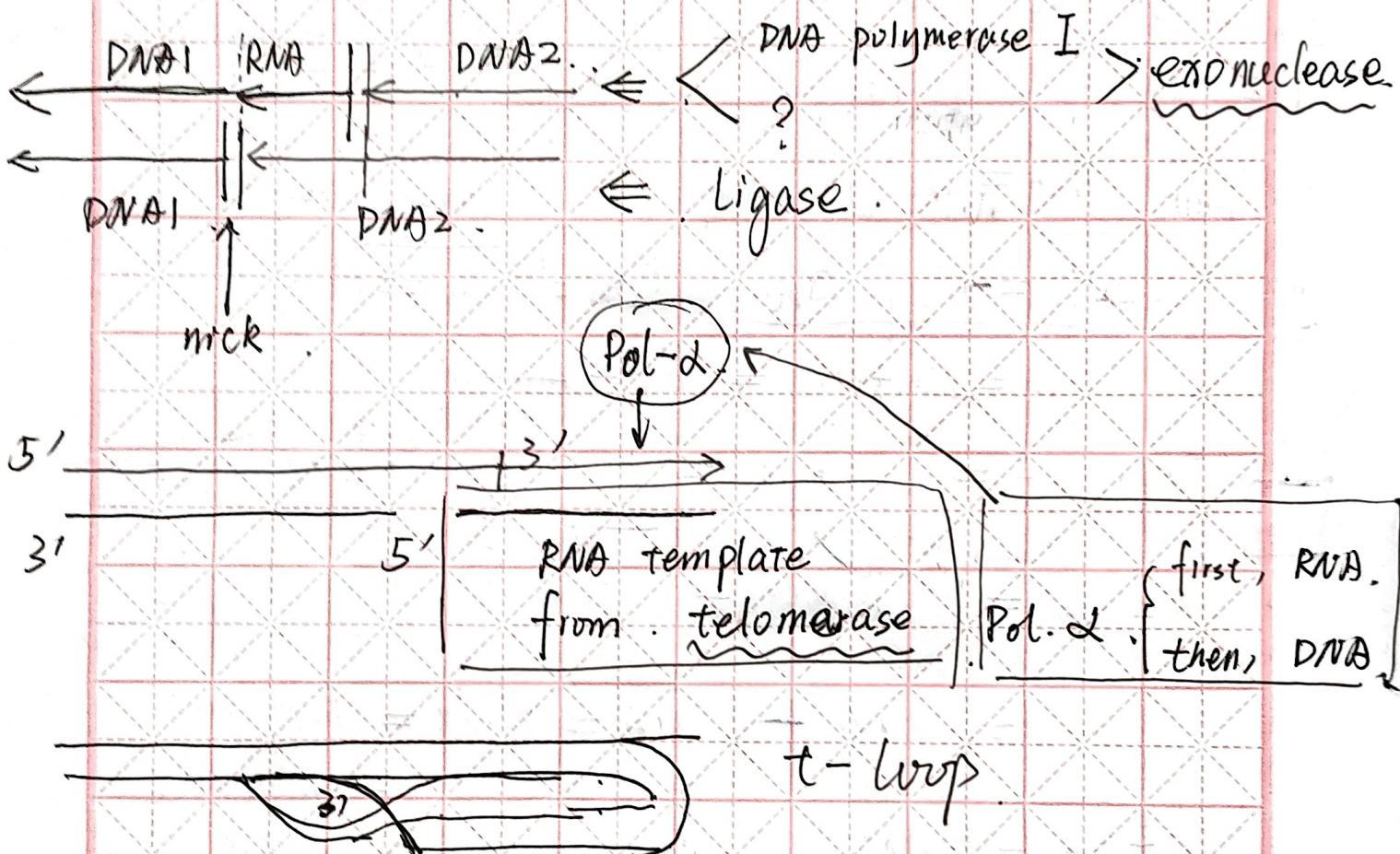
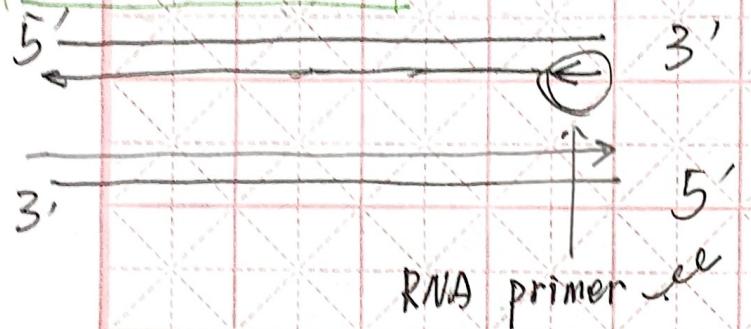
in Eukaryotes.

班级

Termination

年 月 日

* Telomere .



topoisomerase → release torsional stress

Polymerization

proof reading

~~ DNA pol. → Exonucleolytic .

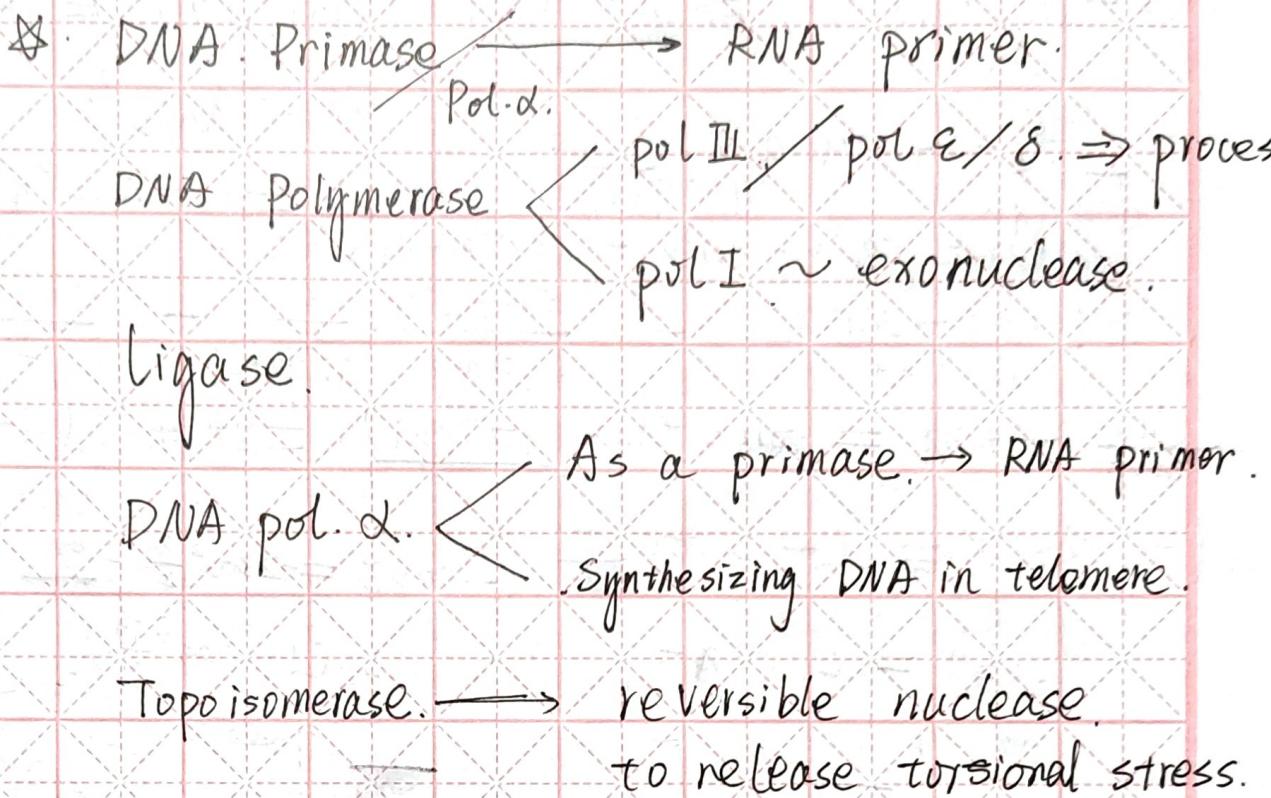
MutS
MutL

methylation : > ; strand-directed
clamp . > ; mismatch .

To 班級 _____

姓名 _____

年 ____ 月 ____ 日



2. Initiation.

RNA Polymerase core enzyme

Holoenzyme

σ factor.

RNA Polymerase II.

transcriptional activator

Mediator

General transcription factors (TF)

→ Chromatin-modifying Proteins.

Chromatin remodelling complexes

Histone-modifying enzymes.

3. Elongation.

RNA Polymerase core enzyme.

RNA Polymerase II.

Elongation factors.

4. Termination.

Rho. ~ Rho-dependent termination.

* Hairpin ~ Intrinsic
an inverted repeat sequence.

④ RNA processing

Outline (In Eukaryotes)

5'-Cap.

Capping Proteins.



RNA Splicing

Spliceosome (snRNA).

Splicing Proteins.



Poly A tail.

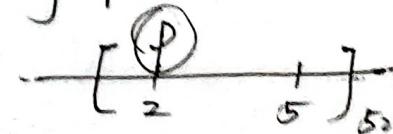
3'-end processing proteins.

④ Selectively Exported from Nucleus.

mRNA.

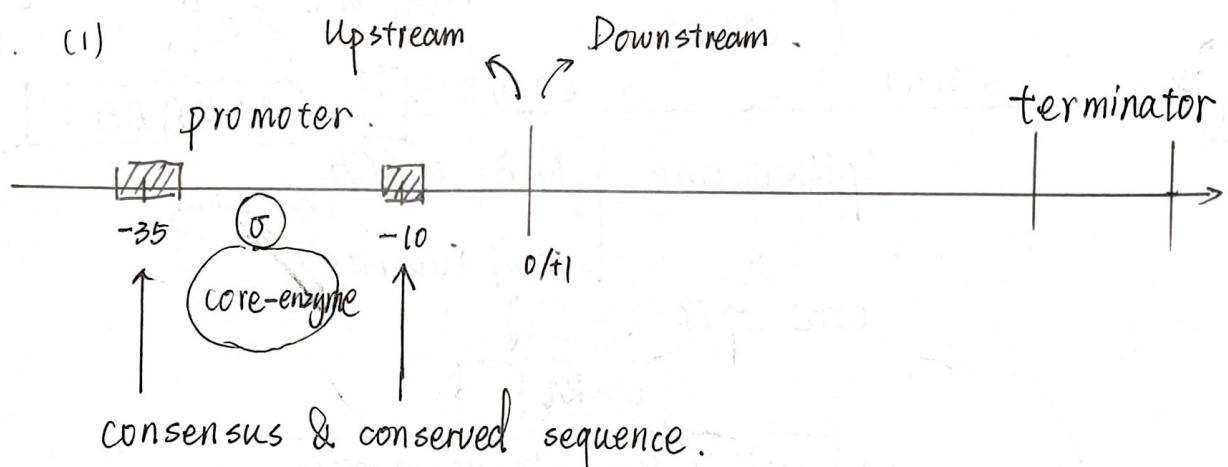
nuclear transport receptor

NPC = nuclear pore complexes



Functions and Interactions among Them

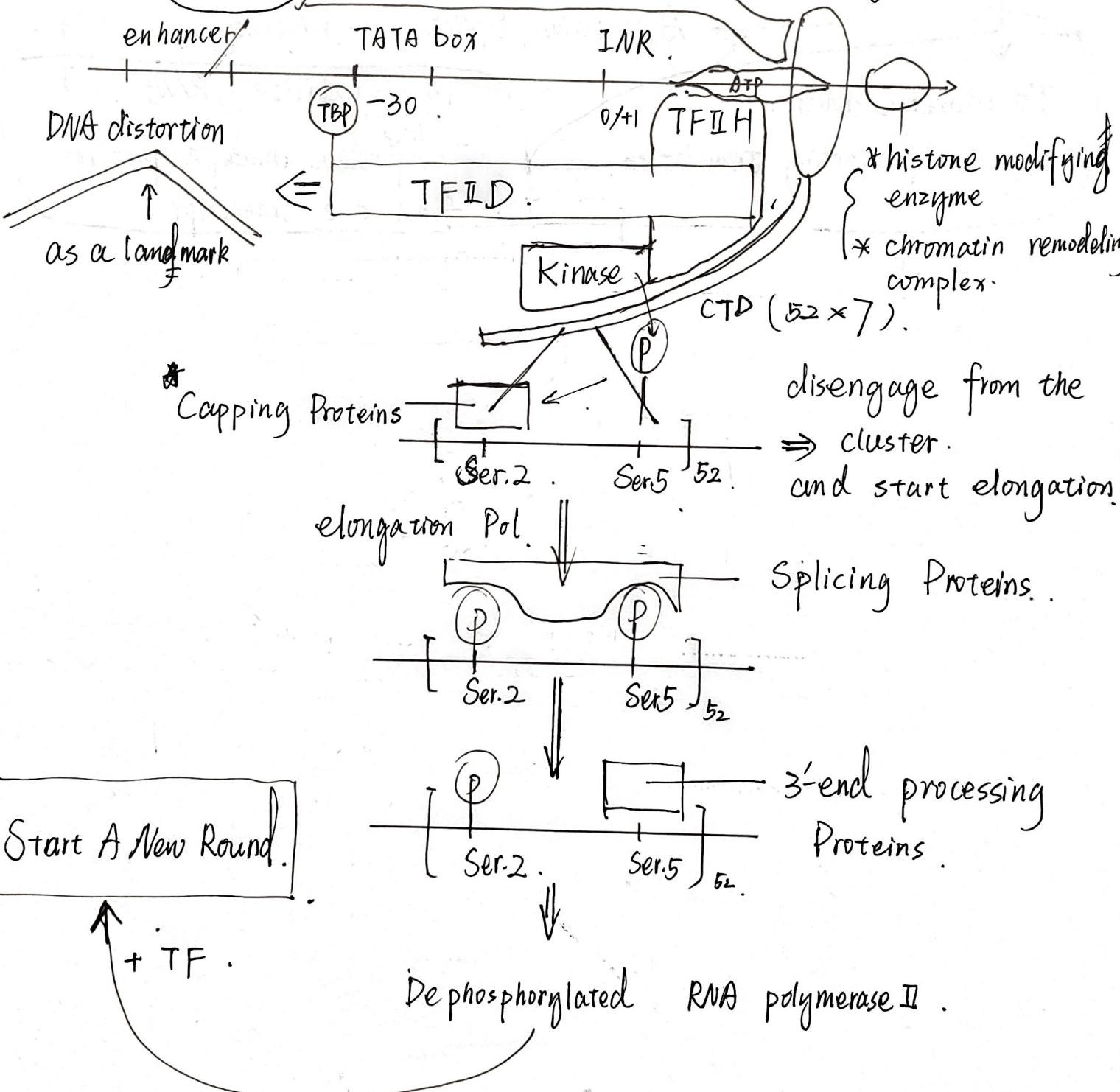
1. (1)



(2) **activator**

mediator

RNA polymerase II.



2.

