

# CONTEXT

basicexam

Memoir Ever

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```
1 \startmodule[basiceexam]
2 \unprotect
3 \setupmodule[mode=student]
4 \def\errorparameter#1{\begingroup
5   \startalignment[center]
6   \framed[align={center,lohi},width=max]{
7     \switchtocolour[blue]\tta
8     There is something Wrong happened at \color[red]{\underbar{parameter:#1}}.\
9     Please check your code.\
10  }\stopalignment
11  \endgroup}
```



## 第1部分 尚未處理的組合

設置頁面 2UP Printing

```
\setuppapersize[user pagesize][real pagesize,real orientation]
\setuparranging[page arrange method]
more info : https://wiki.contextgarden.net/Command/setuparranging
https://wiki.contextgarden.net/Imposition
```

例如：

```
\setuppapersize[A4][A3,landscape]
\setuparranging[2SIDE][2UP]
\setuppagenumbering[alternative=singlesided]{%{doublesided}}

12 \defineconversion [hiragana] [あ,い,う,え,お,か,き,く,け,こ,さ,し,す,せ,そ,
13     た,ち,つ,て,と,な,に,ぬ,ね,の,は,ひ,ふ,へ,ほ,
14     ま,み,む,め,も,や,ゆ,よ,ら,り,る,れ,ろ,わ,ん]
15 \defineconversion [katakana] [ア,イ,ウ,エ,オ,カ,キ,ク,ケ,コ,サ,シ,ス,セ,ソ,
16     タ,チ,ツ,テ,ト,ナ,ニ,ヌ,ネ,ノ,ハ,ヒ,フ,ヘ,ホ,
17     マ,ミ,ム,メ,モ,ヤ,ユ,ヨ,ラ,リ,ル,レ,ロ,ワ,ン]
18 \defineconversion [hiragana-iroha][い,ろ,は,に,ほ,へ,と,ち,り,ぬ,る,を,わ,か,よ,
19     た,れ,そ,つ,ね,な,ら,む,う,み,の,お,く,や,ま,
20     け,ふ,こ,え,て,あ,さ,き,ゆ,め,み,し,ゑ,ひ,も,
21     せ,す,ん]
22 \defineconversion [katakana-iroha][イ,ロ,ハ,ニ,ホ,ヘ,ト,チ,リ,ヌ,ル,ヲ,ワ,カ,ヨ,
23     タ,レ,ソ,ツ,ネ,ナ,ラ,ム,ウ,ヰ,ノ,オ,ク,ヤ,マ,
24     ケ,フ,コ,エ,テ,ア,サ,キ,ユ,メ,ミ,シ,エ,ヒ,モ,
25     セ,ス,ン]
```



## 第2部分 繪製卷頭

下面的命令簡單地展示了如何定義、設定並繪製一個新卷頭。

- 通過 `\definepapertitle[PaperTitleName]` 命令可以新建卷頭信息，
- 通過 `\setuppapertitle[PaperTitleName]` 命令可以設定卷頭信息，
- 通過 `\makepapertitle[PaperTitleName]` 命令可以繪製卷頭結果。

```
\definepapertitle[papertitles]
\setuppapertitle [papertitles][
  n=5,
  typi=secret,
  typii=title,
  typiii=subject,
  typiv=information,
  typv=notice,
  secretstyle=\ss,
  titlestyle=\ssa,
  subjectstyle=\ssb,
  informationstyle=\ttx,
  noticestyle=\rm\it,
  secretalign=flushleft,
  titlealign=center,
  subjectalign=center,
  informationalign=center,
  noticealign=flushleft,
  secret={绝密 ★ 启用前},
  title={2021 年普通高等学校招生全国统一考试},
  subject={日语},
  information={总分:150 分, 考试时间:120 分钟},
  notice={注意事项:
\startitemize[n,packed,joinedup]
\item 答题前, 务必将自己的姓名、准考证号填写在%
  答题卡规定的位置上。%
\item 答选择题时, 必须使用 2B 铅笔将答题卡上对%
  应题目的答案标号涂黑。如需改动, 用橡皮擦%
  擦干净后, 再选涂其它答案标号。答非选择题%
  时, 必须使用 0.5 毫米黑色签字笔, 将答案%
  书写在答题卡规定的位置上。所有题目必须在答%
  题卡上作答, 在试题卷上答题无效。 %
\item 考试结束后, 将试题卷和答题卡一并交回。
\stopitemize},
]
\makepapertitle [papertitles]
```

绝密 ★ 启用前

## 2021 年普通高等学校招生全国统一考试 日语

总分:150 分, 考试时间:120 分钟

注意事项:

1. 答题前, 务必将自己的姓名、准考证号填写在答题卡规定的位置上。
2. 答选择题时, 必须使用 2B 铅笔将答题卡上对应题目的答案标号涂黑, 如需改动, 用橡皮擦擦干净后, 再选涂其它答案标号。答非选择题时, 必须使用 0.5 毫米黑色签字笔, 将答案书写在答题卡规定的位置上。所有题目必须在答题卡上作答, 在试题卷上答题无效。
3. 考试结束后, 将试题卷和答题卡一并交回。

```

26 \setuplabeltext [cn] [section={第,部分},subsection={第,节},]

27 \definehead [ego] [section] % me latin
28 \definehead [isea] [subsection] % he or she latin
29 \definehead [heu] [subsubsection] % och
30 \setuphead [ego] [sectionsegments=section,numbercommand=]
31 \setupheads [isea] [numbercommand=]
32 \setupheads [ego,isea]
33     [indentnext=yes,align=flushleft,
34     before={\blank[quarterline]},
35     after={\blank[quarterline]},
36     sectionconversionset=examnum]
37 \setuphead [ego] [style=\ssa]
38 \setuphead [isea] [style=\hwa]
39 \definestructureconversionset[examnum][chinesenumerals][chinesenumerals]
40 \let\setuppapertitle\setgvariables
41 \def\definepapertitle[#1]{%
42     \gdef\currentpapertitle{#1}%
43     \setuppapertitle[\currentpapertitle][
44         n=5, % 定义需要在试卷标题处需要显示多少元素,
45         typi=secret, % 同时, 自动定义相应数量的元素命令
46         typii=title, % 使用typi typii typiii typiv ...
47         typiii=subject, % 定义每个元素的名称, 同时自动生成相关样式化命令
48         typiv=information, % X Xstyle Xalign beforeX afterX vspacetypi
49         typv=notice,
50         secretstyle=\ss,
51         titlestyle=\ssa,
52         subjectstyle=\ssb,
53         informationstyle=\ttx,
54         noticestyle=\rm\it,
55         secretalign=flushleft,
56         titlealign=center,
57         subjectalign=center,
58         informationalign=center,
59         noticealign=flushleft,
60         secret={绝密 ★ 启用前},
61         title={\currentdate[year] 年普通高等学校招生全国统一考试},
62         subject={SubJect},
63         information={总分:150 分, 考试时间:120 分钟},

```



```

64         notice={注意事项：
65         \startitemize[n,packed,joinedup]
66         \item 答题前，务必将自己的姓名、准考证号填写在%
67         答题卡规定的位置上。%
68         \item 答选择题时，必须使用 2B 铅笔将答题卡上对%
69         应题目的答案标号涂黑。如需改动，用橡皮擦%
70         擦干净后，再选涂其它答案标号。答非选择题%
71         时，必须使用 0.5 毫米黑色签字笔，将答案%
72         书写在答题卡规定的位置上。所有题目必须在答%
73         题卡上作答，在试题卷上答题无效。 %
74         \item 考试结束后，将试题卷和答题卡一并交回。
75         \stopitemize},
76     ]}

77 \def\doifemptyelsex#1#2{\doifelse{#1}{#2}{#1}}
78 \def\definevariable[#1][#2]{% #1=namespace #2=element name
79     \doifelse{\getvariable{#1}{#2align}}{
80         {\setupalign[center]}
81         {\setupalign[\getvariable{#1}{#2align}]}
82     \vskip .1\baselineskip\relax
83     \doifemptyelsex{\getvariable{#1}{before#2}}{
84     \doifemptyelsex{\getvariable{#1}{#2style}}{
85     \doifemptyelsex{\getvariable{#1}{#2}}
86         {\framed[color=red]
87         {\ss warning: #2 is empty ! please input #2.
88         or maybe you have some value is undefined
89         because n > 5.}}
90     \doifemptyelsex{\getvariable{#1}{after#2}}{
91     \vskip .1\baselineskip\relax
92     }

93 \def\makepapertitle[#1]{\begingroup%
94     \setupindenting[no]%
95     \vbox{\newcount\num_element\num_element=1%start vbox
96     \dorecurse{\getvariable{#1}{n}}{start recurse
97         {\doifemptyelsex{\getvariable{#1}{vspacety\romannumeral\num_element}}{
98         {\definevariable[#1][\getvariable{#1}{typ\romannumeral\num_element}]}
99         \advance\num_element by 1\relax}%stop recurse
100     }%stop vbox
101 \endgroup}
102 \startinterface all
103 \setinterfaceconstant {true} {true}
104 \setinterfaceconstant {false} {false}
105 \setinterfaceconstant {answer} {answer}
106 \setinterfaceconstant {answerstyle} {answerstyle}
107 \setinterfaceconstant {answercolor} {answercolor}
108 \setinterfaceconstant {point} {point}
109 \setinterfaceconstant {pointstyle} {pointstyle}
110 \setinterfaceconstant {pointcolor} {pointcolor}
111 \stopinterface
112 \installnamespace {question}

```

```

113 \installcommandhandler \???question {question} \???question
114 \installnamespace      {problem}
115 \installcommandhandler \???problem {problem} \???problem
116 \installnamespace      {choice}
117 \installcommandhandler \???choice {choice} \???choice
118 \installnamespace      {answer}
119 \installcommandhandler \???answer {answer} \???answer
120 \installnamespace      {close}
121 \installcommandhandler \???close {close} \???close
122 \installnamespace      {pitem}
123 \installcommandhandler \???pitem {pitem} \???pitem
124 \installnamespace      {citem}
125 \installcommandhandler \???citem {citem} \???citem
126 \installnamespace      {ocitem}
127 \installcommandhandler \???ocitem {ocitem} \???ocitem
128 \installnamespace      {fillin}
129 \installcommandhandler \???fillin {fillin} \???fillin
130 \installnamespace      {material}
131 \installcommandhandler \???material {material} \???material
132 \installcounterassociation {material}
133 \appendtoks
134   \registermaterialcounter\currentmaterial
135   \definecounter[\currentmaterial]%
136 \to \everydefinematerial
137 \appendtoks
138   \synchronizematerialcounters
139 \to \everysetupmaterial
140 \definematerial [material]
141 \definematerial [number]
142 \definematerial [indicator]
143 \definematerial [indicator_helper]
144 \newif\ifmode_quickcheck \mode_quickcheckfalse
145 \newif\ifmode_check      \mode_checkfalse
146 \newif\ifmode_showanswer \mode_showanswerfalse
147 \newif\ifmode_showpoint  \mode_showpointfalse
148 \newif\ifmode_showscript \mode_showscriptfalse
149 \newif\ifmode_example    \mode_examplefalse
150 \newif\ifenv_question    \env_questionfalse
151 \newif\ifenv_problem     \env_problemfalse
152 \newif\ifenv_choice      \env_choicefalse
153 \newif\ifenv_material    \env_materialfalse
154 \newif\ifenv_close       \env_closefalse
155 \newif\ifenv_answer      \env_answerfalse
156 \newif\ifenv_toplevel    \env_topleveltrue
157 \newif\ifenv_botlevel    \env_botlevelfalse
158 \newif\ifchoice_check    \choice_checkfalse
159 \newif\ifcontinue_counter \continue_counterfalse
160 \newif\ifclose_counter_reset \close_counter_resetfalse

161 \newdimen\width_cit
162 \newdimen\width_cit_max

```

```

163 \newdimen\choice_max_compared_width%
164 \newdimen\width_max_with_label
165 \newdimen\label_width
166 \newcount\totalchoicenumber%
167 \newcount\currentchoicenumber%
168 \newcount\totalpitemnumber%
169 \newcount\currentpitemnumber%
170 \newcount\cnt_step_point% for point calculate
171 \newcount\cnt_step_point_temp%
172 \newcount\current_total_choice_number% 當前選項 ABCD 總計數
173 \newcount\current_available_columns%可排版的最多列數
174 \newcount\cnt_closetest
175 \newcount\cnt_closetest_tempa
176 \newcount\tempa\newcount\tempb
177 \newcount\cnt_example_question

178 \definecounter[Unicode][way=bychapter]
179 \definecounter[Unicode_toplevel] % for level 1 : question or problem
180 \definecounter[Unicode_midlevel] % for level 2 : problem or level 1
181 \definecounter[Unicode_botlevel] % for level 3 : only for level 2
182 \definecounter[totalchoicenumber] % get total number of choice
183 \definecounter[currentchoicenumber] % get order number of choice
184 \definecounter[strc_close_counter] % 为 close 环境可以继续 question 序号而设置
185 \def\EQusetionID{E-\somenamedheadnumber{chapter}{current}{-\number\cnt_example_question}
186 \def\QusetionID{\ifmode_example\EQusetionID\else%
187 \somenamedheadnumber{chapter}{current}{-\rawcountervalue[Unicode]\fi}
188 \def\increaseEQusetionID{\advance\cnt_example_question by 1\relax}
189 \def\decreaseEQusetionID{\advance\cnt_example_question by -1\relax}
190 \def\increaseQusetionID{\ifmode_example\increaseEQusetionID\else%
191 \incrementcounter[Unicode]\fi}
192 \def\decreaseQusetionID{\ifmode_example\decreaseEQusetionID\else%
193 \decrementcounter[Unicode]\fi}
194 \def\ProblemID{\namedheadnumber{chapter}{-\rawcountervalue[Unicode_toplevel]}

195 \definedataset[Answer_collector]
196 \definedataset[Problem_collector]
197 \definedataset[Choice_collector]

198 \defineitemgroup [env_problem] %
199 \setupitemgroup [env_problem] [each] [n,packed,joinedup,nowhite]
200 \defineitemgroup [env_question] %
201 \setupitemgroup [env_question] [each] [n,packed,joinedup,nowhite,continue]
202 \defineitemgroup [env_choice] %
203 \setupitemgroup [env_choice] [each] [A,packed,joinedup,nowhite]
204 \definertextbackground[env_answer]
205 \definebar [fillin_text]
206 \defineoverlay [normalframeOL]
207 [\useMPgraphic{normalframeMP}]
208 \startuseMPgraphic{normalframeMP}
209 draw unitsquare xyscaled (\overlaywidth, \overlayheight)
210 \stopuseMPgraphic
211 \startuseMPgraphic{rules:under:wave}

```

```

212   vardef lsin primary x =
213     lua("mp.print(math.sin(" & decimal x & ")")")
214   enddef ;
215   draw function(1, "x", "lsin(1.2*x)", 0, RuleWidth, .1pt)
216     shifted (0,RuleFactor*RuleOffset+RuleDepth)
217     withpen pencircle scaled RuleThickness
218     withcolor RuleColor ;
219   setbounds currentpicture to unitsquare xysized(RuleWidth,RuleHeight) ;
220 \stopuseMPgraphic
221 \def\choice_availablecolumns{\datasetvariable{Choice_collector}{\QusetionID}{availablecolumns}}
222 \def\choice_itemmaxwidth{\datasetvariable{Choice_collector}{\QusetionID}{itemmaxwidth}}
223 \def\choice_totalchoicenumber{\datasetvariable{Choice_collector}{\QusetionID}{totalchoicenumber}}
224 \def\choice_answer{\datasetvariable{Choice_collector}{\QusetionID}{answer}}
225 \def\choice_answerstatus{\datasetvariable{Choice_collector}{\QusetionID}{answerstatus}}
226 \def\pitem_totalnumber{\datasetvariable{Problem_collector}{\ProblemID}{totalpitemnumber}}
227 \def\pitem_totalpoint{\datasetvariable{Problem_collector}{\ProblemID}{totalpitempoint}}
228 \def\answer_id{\datasetvariable{Answer_collector}{\QusetionID}{id}}
229 \def\answer_envid{\datasetvariable{Answer_collector}{\QusetionID}{envid}}
230 \def\answer_order{\datasetvariable{Answer_collector}{\QusetionID}{order}}
231 \def\answer_userorder{\datasetvariable{Answer_collector}{\QusetionID}{userorder}}
232 \def\answer_answer{\ifmode_example You're in EXAMPLE MODE!\else\datasetvariable{Answer_collector}{
233   \QusetionID}{answer}\fi}
234 \def\answer_point{\datasetvariable{Answer_collector}{\QusetionID}{point}}
235 \def\answer_totalnumber{\datasetvariable{Answer_collector}{\QusetionID}{totalnumber}}
236 \def\point_point{\datasetvariable{Answer_collector}{\QusetionID}{point}}
237 \def\show_check_info{
238   \ifmode_quickcheck
239     \par\framed[width=\textwidth,align=flushleft]%
240     {\answer_id\ ** \answer_answer\ ** \mode_status}\par
241   \else%
242     \ifmode_check\show_check_infos\else\fi%
243   \fi}
244 \def\show_check_infos{\begingroup\par\leftskip Opt\relax\noindent%
245   \setupinterlinespace[line=2ex]%
246   \framed[align=flushleft]{\language[en]%
247     \hfil \ttx {\bf NOTICE: MODE CHECK IS ON} \hfil\par\ifmode_example
248     \hfil {\bf NOTICE: MODE EXAMPLE IS ON} \hfil\par\fi
249     \hfil \ttx Notice,{\bf Cinfos} only show choice env information \hfil\par
250     \hfil {\bf CU} means 'current' , if CUuserorder  $\neq$  CUorder, \hfil\par
251     \hfil It maybe because START parameter is enabled. \hfil\par\ifmode_example
252     \hfil Notice,{\bf MODE EXAMPLE} wont provide data infos \hfil\par\fi
253     \setuptabulate[bodyfont={tt,9pt}]
254     \starttabulate[|rp(.2\textwidth)|lp(.25\textwidth)|rp(.2\textwidth)|lp(.25\textwidth)|lw1B|]
255     \NC {\bf Name} \NC {\bf Content} \NC {\bf Cinfos} \NC {\bf Content} \NC \NR \HL
256     \NC CUitemgroup \NC \currentitemgroup \NC CUQusetionID \NC \QusetionID \NC \NR
257     \NC CUparen \NC \currentparentitemgroup \NC CUCmaxwidth \NC \choice_itemmaxwidth \NC \NR
258     \NC CUorder \NC \currentorder \NC totalCnumber \NC \choice_totalchoicenumber \NC \NR
259     \NC CUuserorder \NC \currentuserorder \NC Cavailable \NC \choice_availablecolumns \NC \NR
260     \NC answer \NC \answer_answer \NC Canswer \NC \choice_answer \NC \NR
261     \NC CUpoint \NC \point_point \NC \NC \NC \NC \NR \HL

```

```

262 \NC mode.status \NC \mode_status \NC CUPProblemID \NC \ProblemID \NC\NR
263 \NC level.check \NC \level_status \NC totalPnumber \NC \pitem_totalnumber \NC\NR
264 \NC Canswerstatus \NC \choice_answerstatus \NC totalPpoint \NC \pitem_totalpoint \NC\NR
265 \stoptabulate}
266 \par\endgroup}

267 \def\dimtonum #1{\number\numexpr \dimexpr #1\relax*635/65536\relax }
268 \newcount\cnt_floor
269 \def\floor#1{\floorhelper#1.\relax}
270 \def\floorhelper#1.#2\relax{\ifx\relax#2\relax#1%
271 \else\if.#2#1\else\floorhelphelper{#1}#2\fi\fi}
272 \def\floorhelphelper#1#2.{\ifnum#2>0%
273 \floorhelphelper#1\relax\relax\relax\else#1\fi}
274 \def\floorhelphelper#1#2\relax{%
275 \if-#1\relax-\cnt_floor=0#2\relax%
276 \advance\cnt_floor by 1\relax%
277 \number\cnt_floor\relax%
278 \else\cnt_floor=0#1#2\relax%
279 \number\cnt_floor\relax\fi%
280 }
281 \directlua{MultiAnswerCollector = {}}
282 \def\collect#1{%if want show collect,show #1
283 \directlua{table.insert(MultiAnswerCollector, [[#1]])}}
284 \def\callcollection{\directlua{
285 tex.sprint(table.concat(MultiAnswerCollector, " "))
286 MultiAnswerCollector = {}
287 }}

288 \newcount\c_example_toggle
289 \def\example_toggle[#1]% 专用于测试是否开启了 example mode
290 {\doif{csname #1parameter\endcsname}{example}}{true}%
291 {\mode_exampletrue\global\c_example_toggle=999\relax}}

292 \def\level_status{\ifenv_toplevel <env_toplevel>\else%
293 \ifenv_botlevel <env_botlevel>\else
294 <env_midlevel>\fi\fi}

295 \def\mode_status{ \ifmode_check <M:C>\fi%check
296 \ifmode_showanswer <M:A>\fi%answer
297 \ifmode_showpoint <M:P>\fi%point
298 \ifmode_example <M:E>\fi}

299 \def\currentorder{% get unique order ( no chapter number )
300 \rawcountvalue[Unicode_toplevel]-\rawcountvalue[Unicode_midlevel]%
301 \ifnum\rawcountvalue[Unicode_botlevel]=0\relax\else%
302 (\rawcountvalue[Unicode_botlevel])\fi%
303 }
304 \newcount\parentitemnumber
305 \def\set_currentuserorder[#1]{% set order that user setted
306 \ifcsname #1order\endcsname\else%
307 \expandafter\newcount\csname #1order\endcsname\fi%
308 \ifenv_toplevel\csname #1order\endcsname=\currentitemnumber\relax%

```

```

309     \else      \csname #1order\endcsname=\parentitemnumber \relax%
310     \fi}

311 \def\current_user_order#1{% get user order which can by changed by START
312     \number\csname #1order\endcsname%
313     \ifnum\rawcountervalue[Unicode_botlevel]=0\relax\else%
314     (\rawcountervalue[Unicode_botlevel])\fi}

315 \def\set_count_envlevel[#1][#2]{%
316     \setcounter[Unicode_midlevel][0]%
317     \setcounter[Unicode_botlevel][0]%
318     \doifinchoiceelse{#1}{\currentitemgroup}%
319         {\env_topleveltrue}{}%
320         {\env_toplevelfalse}{}%
321     \ifenv_toplevel\incrementcounter[Unicode_toplevel]%
322         \else\incrementcounter[Unicode_midlevel]\fi%
323     \set_currentuserorder[#2]%
324     \edef\currentuserorder{\current_user_order{#2}}%
325     \show_check_info%
326 }

327 \def\set_count_itemlevel[#1][#2]{%
328     \doifinchoiceelse{#1}{\currentitemgroup}%
329         {\env_botleveltrue}{}%
330         {\env_botlevelfalse}{}%
331     \ifenv_botlevel\incrementcounter[Unicode_botlevel]%
332         \else\incrementcounter[Unicode_midlevel]\fi%
333     \set_currentuserorder[#2]%
334     \edef\currentuserorder{\current_user_order{#2}}%
335     \show_check_info%
336 }

337 \def\dataset_collector[#1][#2]{%#1 where answer from %% #2 user id for the env
338     \setdataset [Answer_collector][\QusetionID]%收集答案並在未來展開
339     [id={\QusetionID},%
340     envid={\currentitemgroup},%
341     order={\number\currentorder},%
342     userorder={\currentuserorder},%
343     answer={\pass_parameter_answer},%
344     point={\csname #1parameter\endcsname{point}},%
345     totalnumber={\the\totalpitemnumber},}%
346     % totalnumber 需要修改為根據環境改變所收集的數量信息

347 \def\pass_parameter_answer{%
348     \ifenv_choice\get_choice_answer\else%
349     \ifenv_problem\check_env_answer[pitem]\else%
350     \check_env_answer[ocitem]\fi\fi}

351 \def\check_env_answer[#1]{
352     \doifelsomething{\csname #1parameter\endcsname{answer}}{}}%
353     no \color{red}{\tt #1 answer} value there.
354     {\csname #1parameter\endcsname{answer}}%
355 }

```

```

356 \def\get_choice_answer_num#1{%
357   \doifsomethingelse%
358   {\datasetvariable{Choice_collector}{#1}{answer}}%
359   {\datasetvariable{Choice_collector}{#1}{answer}}%
360   {no \color{red}{\tt Choice answer} value here.}}
361 \def\get_choice_answer{\increaseQusetionID%
362   \get_choice_answer_num{\QusetionID}%
363   \decrementcounter[Unicode]}
364 \def\get_fillin_answer{%
365   \datasetvariable{Fillin_collector}{\QusetionID}{answer}%
366   }
367
368 \def\get_pitem_point{%
369   \def\ProblemID{\namedheadnumber{chapter}-\nextcountervalue[Unicode_toplevel]}%
370   \datasetvariable{Problem_collector}{\ProblemID}{totalpitempoint}}
371
372 \let\getanswerfromchoice\get_choice_answer
373 \let\getanswerfromfillin\get_fillin_answer
374 \let\getpointfrompitem\get_pitem_point
375 \let\getpointfromproblem\get_pitem_point
376
377 \def\getanswerforanswer{% used for answer env to auto get answer
378   \datasetvariable{Answer_collector}{\QusetionID}{answer}}
379 \def\getpointforanswer{% used for answer env to auto get answer
380   \datasetvariable{Answer_collector}{\QusetionID}{point}}
381
382 \def\check_choice_answerstatus{
383   \ifchoice_check checked!%
384   \else%
385     \color{red}{unchecked!}\\
386     please set the answer manually
387     by add \[*\] parameter to {\tt cite} command.\\
388   \fi}
389
390 \def\paren#1{(#1)}
391
392 \def\show_point_or_answer[#1][#2]{%#1 parameter %#2 modename
393   \processaction[\csname #1parameter\endcsname{show#2}]{%
394     true=>\csname mode_show#2true\endcsname,
395     false=>\csname mode_show#2false\endcsname,}%
396   \expandafter\edef\csname current#1#2\endcsname{\csname #1parameter\endcsname{#2}}%
397   \csname ifmode_show#2\endcsname%
398     \begingroup%
399     \csname #1parameter\endcsname{#2style}%
400     \switchtocolour[\csname #1parameter\endcsname{#2color}]%
401     \paren {\csname #1parameter\endcsname{#2prelabel} like=>answer : blabla
402       \csname #1parameter\endcsname{#2}%\csname current#1#2\endcsname%      like=> 1 points
403       \csname #1parameter\endcsname{#2label}}%
404     \endgroup%
405   \fi}
406
407 \defineconversion[tnum][\addff{tabularnumbers}]
408 \def\inherit_itemgroup_option[#1]{

```

```

402 \setupcounter [itemgroup:env_#1]
403 [ way=\csname #1parameter\endcsname\c!way]
404 \setupitemgroup[env_#1]
405 [ left=\csname #1parameter\endcsname\c!left,
406   right=\csname #1parameter\endcsname\c!right,
407   stopper=\csname #1parameter\endcsname\c!stopper,
408   distance=\csname #1parameter\endcsname\c!distance,
409   before=\csname #1parameter\endcsname\c!before,
410   after=\csname #1parameter\endcsname\c!after,
411   width=\csname #1parameter\endcsname\c!width,
412   align=\csname #1parameter\endcsname\c!align,
413   indenting=\csname #1parameter\endcsname\c!indenting,
414   symalign=\csname #1parameter\endcsname\c!symalign,
415   symbol=\csname #1parameter\endcsname\c!symbol,
416   itemalign=\csname #1parameter\endcsname\c!itemalign,
417   option=\csname #1parameter\endcsname\c!option,
418   style=\csname #1parameter\endcsname\c!style,
419   color=\csname #1parameter\endcsname\c!color,
420   numberconversion=\csname #1parameter\endcsname\c!numberconversion,
421   ]%
422 }

```



## 第3部分 设置 problem 环境

`\problem` 環境命令可以設置多個聚合問題,該環境具有一個特定的子命令 `\pitem` 來列明每個問題。可以用來設置填空、問答等題目。

```
\startproblem
\startpitem 該環境位於 \currentitemgroup。 \stoppitem
\startpitem 該環境位於 \currentitemgroup。 \stoppitem
\startpitem 該環境位於 \currentitemgroup。 \stoppitem
\stopproblem
```

1. 該環境位於 `env_problem:1`。
2. 該環境位於 `env_problem:1`。
3. 該環境位於 `env_problem:1`。

```
423 \setupproblem [left={}, %%%% follow is itemize option
424         right={},
425         stopper={.\~},
426         distance=.5em,
427         %before=,
428         %after=,
429         width=.5em,
430         %align=,
431         indenting=no,
432         %symalign=,
433         %symbol=,
434         %itemalign=,
435         option={packed,joinedup,nowhite},
436         way=bysection,
437         numberconversion=tnum,]
438 \inherit_itemgroup_option[problem]
```

不同於 `\question` 環境所有的序號都是連續的,`\problem` 環境每次開始後都是重新進行計數。

如果想要為 `\problem` 環境添加題幹,可以將 `\problem` 環境放置在 `\question` 環境之中。

```
\startquestion
該環境位於 \currentitemgroup。
\startproblem[left={({,right={})},distance=1em,stopper={}]
\startpitem 該環境位於 \currentitemgroup。 \stoppitem
\startpitem 該環境位於 \currentitemgroup。 \stoppitem
\startpitem 該環境位於 \currentitemgroup。 \stoppitem
\stopproblem
\stopquestion
```

1. 該環境位於 `env_question:1`。
  - (1) 該環境位於 `env_problem:2`。
  - (2) 該環境位於 `env_problem:2`。
  - (3) 該環境位於 `env_problem:2`。

如果想要設置填充題,可以使用 `\fillin` 命令。同時,`\getanswerfromfillin`命令會獲取臨近 `\fillin` 的內容,並輸出為答案。

```
\setupanswer[showanswer=true]
\startquestion
該環境位於 \currentitemgroup。
\setuppitem[answer=\getanswerfromfillin,showanswer=true]
\startproblem[left={({,right={)},distance=1em,stopper={}}]
\startpitem 該環境位於 \fillin{env_question:1}。 \stoppitem
\startanswer[answer=\getanswerfromfillin]
\input knuthmath
\stopanswer
\startpitem 該環境位於 \fillin[mp=rules:under:wave]{env_question:1}。 \stoppitem
\startanswer[answer=\getanswerfromfillin]
\input knuthmath
\stopanswer
\startpitem
該環境位於 \fillin[empty=number]{env_question:2}。
\stoppitem
\startanswer[answer=\getanswerfromfillin]
\input knuthmath
\stopanswer
\startpitem 該環境位於 \fillin[empty=yes]{env_question:3}。 \stoppitem
\startanswer[answer=\getanswerfromfillin]
\input knuthmath
\stopanswer
\startpitem 該環境位於 \fillin[empty=yes,left={({,right={)}}]{env_question:4}。 \stoppitem
\startanswer[answer=\getanswerfromfillin]
\input knuthmath
\stopanswer
\stopproblem
\stopquestion
```

2. 該環境位於 `env_question:1`。
- (1) `(env_question:1)` 該環境位於 env question:1。
  - (2) `(env_question:1)` 該環境位於 env question:1。
  - (3) `(env_question:2)` 該環境位於 3。
  - (4) `(env_question:3)` 該環境位於         。
  - (5) `(env_question:4)` 該環境位於 ((        ))。

```
439 \tolerant\protected\def\startproblem[#1]{%
440 \ifenv_question\increaseQusetionID%如果 problem 作为子环境存在时
441 \parentitemnumber=\currentitemnumber\relax% 直接获取 question 的 ID
442 \set_count_envlevel[env_problem:2][question]%
443 \decreaseQusetionID\fi%
444 \beginingroup\env_problemtrue%
445 \iffirstargument\setupproblem[#1]\fi%
446 \startitemgroup [env_problem]%
447 [\problemparameter{numberconversion},#1]%
448 [#1]%
```

```

449 \currentpitemnumber=0\relax%
450 \cnt_step_point=0\relax%
451 \cnt_step_point_temp=0\relax%
452 \ifenv_toplevel\set_count_envlevel[env_problem:1][problem]\fi}

453 \def\stopproblem{
454   \ifnum \totalpitemnumber > \currentpitemnumber%
455     \totalpitemnumber = \totalpitemnumber%
456   \else \totalpitemnumber = \numexpr\currentpitemnumber-1\relax%
457   \fi%遞歸出總序號
458   \setdataset [Problem_collector][\ProblemID]%收集信息並在未來展開
459   [totalpitemnumber={\the\totalpitemnumber},
460     totalpitempoint={\number\cnt_step_point},]%
461 \stopitemgroup\endgroup}

```

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## 第4部分 设置 question 环境

`\question` 环境命令可以用来设置题干。只需将题干包裹在 `\startquestion` `\stopquestion` 命令之間即可。

```
\startquestion
  該環境位於 \currentitemgroup。
\stopquestion
\startquestion
  該環境位於 \currentitemgroup。
\stopquestion
```

3. 該環境位於 `env_question:1`。
4. 該環境位於 `env_question:1`。

`\question` 环境命令繼承了大部分 `\itemgroup` 环境的選項設置。因此,可以像修改 `\itemgroup` 一樣,使用 `\setupquestion` 來修改該環境。

```
\setupquestion[color=green,style=\ss,start=22]
\startquestion
  該環境位於 \currentitemgroup。
\stopquestion
```

1. 該環境位於 `env_question:1`。

`question` 环境可以设置答案和分值。该键值详细的设置如下：

showanswer	answer	answerstyle	answercolor
		answerprelabel	answerlabel
showpoint	point	pointstyle	pointcolor
		pointprelabel	pointlabel

```
\startquestion[showpoint=true,point=5,pointlabel={points},
  showanswer=true,answer={new answer},answerstyle={\tt},]
  該環境位於 \currentitemgroup。
\stopquestion
```

2. (5points) (new answer) 該環境位於 `env_question:1`。

此外,`question` 设置了一个特殊的键值 `example=true`,可以是当前题目不被录入答案。在(v20241023)中,通过不太正常的方式设置了 `example` 后的题目可以自动重置回到序号 1。或许,可以设置一个新的键值,来设定 `example` 之后的题目是重置为 1 还是接续上一个序号。此外,由于 `question` 内置了一个 `item`,因此可以使用 `reference` 来创建引用。

**關於 point 和 answer 的設定:** `point` 的分值默認是一整個题目的總分數。如果當前字環境為 `problem`,只要為每個 `pitem` 設計了 `point` 的分值,該模塊就會自動計算,並通過 `\getpointfrompitem` 來獲取計算後的 `point`。`answer` 的獲取也是一樣。可以通過 `\getanswerfromchoice` 來獲取當前環境的選項答案。需要注意的是,並沒有設計 `\getanswerfrompitem`。在設計時, `pitem` 默認是擁有多個同級項目的。也就是說,會在同一個 `question` 環境中,有多個子答案。我們無法獲知應該使用哪一個作為當前環境的答案。同樣的道理,每個 `question` 環境內只有一個 `choice` 環境,只需要直接為 `question` 環境配置分值即可。`choice` 環境並不能配置分數。

```

462 \setupquestion [%showpoint=false,
463     %point=,
464     pointstyle=\ttx,
465     %pointcolor=,
466     %pointprelabel=,
467     pointlabel={分},
468     %showanswer=false,
469     %answer=,
470     %answerlabel=,
471     %answerprelabel=,
472     answerstyle=\ss,
473     answercolor=red,
474     %example=,
475     left={}, %%%% follow is itemize option
476     right={},
477     stopper={.\sim},
478     distance=0em,
479     option={packed,joinedup,nowhite},
480     %before=,
481     %after=,
482     width=1.5em,
483     %align=,
484     indenting=no,
485     %symalign=,
486     %symbol=,
487     %itemalign=,
488     way=bychapter,%wont work if continue on
489     numberconversion=tnum,]
490 \inherit_itemgroup_option[question]

491 \tolerant\protected\def\startquestion[#1]{\begingroup%
492     \env_questiontrue%
493     \global\c_example_toggle=0\relax
494     \iffirstargument\setupquestion[#1]\fi%
495     \example_toggle[question]%
496     \ifempty{\questionparameter{start}}% 避免 continue 和 start 属性冲突
497     \startitemgroup[env_question]%
498         [\questionparameter{numberconversion},continue,#1]%
499         [#1]%
500 \else\startitemgroup[env_question]%
501     [\questionparameter{numberconversion},#1]%
502     [#1]%
503 \fi\item[\questionparameter{!reference}]%
504 \show_point_or_answer[question][point]%
505 \show_point_or_answer[question][answer]%
506 \increaseQusetionID%
507 \parentitemnumber=\currentitemnumber\relax
508 \set_count_envlevel[env_question:1][question]%
509 \setcounter [strc_close_counter][\currentitemnumber]%
510 \savecounter [strc_close_counter]%
511 \decreaseQusetionID%

```

```
512   \unskip}  
  
513   \def\stopquestion{\stopitemgroup\endgroup%  
514     \ifnum\c_example_toggle=999\relax%  
515       \resetcounter [itemgroup:env_question]%  
516     \fi}
```

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## 第5部分 设置 choice 环境

該環境命令只能置於 `\question` 環境之下。該環境有一個子項目：`\startcitem \stopcitem`。

```
\startcitem {選項內容} \stopcitem
```

可以通過 `[*]` 來標記正確答案。如果想要設置多選題,只需要對每個正確答案添加 `[*]` 即可。

```
\setupquestion[showanswer=true]
\startquestion[answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup。
  \startchoice
    \startcitem[*]{Some Words}\stopcitem
    \startcitem{Some Words}\stopcitem
    \startcitem[*]{Some Words}\stopcitem
    \startcitem{Some Words}\stopcitem
  \stopchoice
\stopquestion
\startquestion[answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup。
  \startchoice
    \startcitem{Some More Words}\stopcitem
    \startcitem{Some More Words}\stopcitem
    \startcitem[*]{Some More Words}\stopcitem
    \startcitem[*]{Some More Words}\stopcitem
  \stopchoice
\stopquestion
\startquestion[answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup。
  \startchoice
    \startcitem{Some More More Words}\stopcitem
    \startcitem[*]{Some More More Words}\stopcitem
    \startcitem{Some More More Words}\stopcitem
    \startcitem[*]{Some More More Words}\stopcitem
  \stopchoice
\stopquestion
```

- |                                |                         |                         |                         |                         |
|--------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| 3. (A C) 該環境位於 env_question:1。 | A. Some Words           | B. Some Words           | C. Some Words           | D. Some Words           |
| 4. (C D) 該環境位於 env_question:1。 | A. Some More Words      | B. Some More Words      | C. Some More Words      | D. Some More Words      |
| 5. (B D) 該環境位於 env_question:1。 | A. Some More More Words | B. Some More More Words | C. Some More More Words | D. Some More More Words |

同時為 `\startcitem\stopcitem` 定義了同義命令 `\citem` 和 `\fragilecitem`。`\fragilecitem`命令可以不通過界定花括號來排版選項,但可能會引發未知問題,特別是選項中含有空格時。`\citem` 則需要將選項包裹在花括號中。

```
\citem {選項內容}
\fragilecitem 選項內容
```

该环境继承了一部分 `itemgroup` 的键值,就如同前两个命令一样。不同于 `question` 具有 `answer` 和 `point` 两种键值,该环境只具有 `answer` 相关的键值,来特别地设置是否显示答案和配置答案样式。因为 `choice` 环境的特殊性,`point` 键值通过 `question` 环境来显示。和 `question` 环境的区别是 `question` 环境的 `answer` 控制答案是否显示在题干以及设置相关样式。`choice` 环境的 `answer` 控制答案是否显示在选项以及设置相关样式。

另外,`choice` 环境有一个特别的值: `maxiwidth` key is for calcaluted max width of choice and waited to be compare, notice this key is `maxiwidth`,and difference from `maxwidth` which for `setupitemgroup` command

```

517 \setupchoice [answer=\get_choice_answer,
518             answerstyle=\ss\tf,
519             answercolor=red,
520             left={}, %%%% follow is itemize option
521             right={},
522             stopper={.\sim},
523             distance=.5em,
524             option={packed,joinedup,nowhite},
525             %before=,
526             %after=,
527             width=1em,
528             maxiwidth=.8\textwidth,
529             start=1,
530             %align=,
531             indenting=no,
532             %symalign=,
533             %symbol=,
534             %itemalign=,
535             way=bysection,
536             numberconversion=A,]
537 \inherit_itemgroup_option[choice]

538 \tolerant\protected\def\startchoice[#1]{\begingroup%
539   \env_choicetrue%
540   \increaseQusetionID%
541   \doifelsomething{\datasetvariable{Choice_collector}%
542     {\QusetionID}{totalchoicenum}}% arg_1
543     {\scratchcounter\datasetvariable{Choice_collector}%
544       {\QusetionID}{totalchoicenum}}% arg_2
545       {\scratchcounter\zerocount}% arg_3
546   \current_total_choice_number=\number\scratchcounter\relax%
547   \doifelsomething{\datasetvariable{Choice_collector}%
548     {\QusetionID}{availablecolumns}}%
549     {\scratchcounter\datasetvariable{Choice_collector}%
550       {\QusetionID}{availablecolumns}}%
551       {\scratchcounter\zerocount}%
552   \current_available_columns=\number\scratchcounter\relax%
553   \startluacode
554   tbl_num_temp = {"one","two","three","four",
555     "five","six","seven","eight","nine"}
556   local tbl_cit_count    = tex.count['current_total_choice_number']
557   local available_columns = tex.count['current_available_columns']
558   available_columns_arg = ""

```

```

559   if (tbl_cit_count == 3) and (available_columns < tbl_cit_count)
560   then available_columns_arg = "one"
561   elseif (tbl_cit_count > 1) and (available_columns >= tbl_cit_count)
562   then available_columns_arg = "horizontal," .. tbl_num_temp[tbl_cit_count]
563   elseif (tbl_cit_count >= 1) and (available_columns <= 1 )
564   then available_columns_arg = "one"
565   else available_columns_arg = "horizontal,two"
566   end
567   \stopluacode
568   \iffirstargument\setupchoice[#1]\fi%
569   \startitemgroup[env_choice]%
570       [\choiceparameter{numberconversion},#1,%
571       \ctxlua{context(available_columns_arg,"")},]%
572       [#1]%
573   \processaction[\choiceparameter{showanswer}] [%
574       true=>\mode_showanswertrue,
575       false=>\mode_showanswerfalse,]%
576   \totalchoicenumber=0\relax%
577   \currentchoicenumber=0\relax%
578   \show_check_info
579   \setcounter [totalchoicenumber] [0]% recalculator when startitemgroup
580   \setcounter [currentchoicenumber] [0]% recalculator when startitemgroup
581   }

582 \def\stopchoice{%
583     \width_max_with_label = \dimexpr\width_cit_max + %
584         \d_strc_itemgroups_list_width\relax%
585     \currentchoicenumber=\numexpr\currentchoicenumber-1\relax%
586     \ifnum \totalchoicenumber > \currentchoicenumber%
587         \totalchoicenumber = \totalchoicenumber%
588     \else \totalchoicenumber = \currentchoicenumber%
589     \fi%遞歸出總序號
590     \choice_max_compared_width=\choiceparameter{maxiwidth}\relax%
591     \tempa =\dimtonum{\choice_max_compared_width}\relax%
592     \tempb =\dimtonum{\the\width_max_with_label}\relax%
593     \ifdefined \currentuserorder\else%
594         \doifincsnameelse{env_choice:2}{\currentitemgroup}%
595         {}{\set_count_envlevel[env_choice:1][choice]}\fi%
596     \setdataset [Choice_collector][\QusetionID][%收集選項信息,傳遞給下面的總收集處
597         id={\QusetionID},%
598         envid={\currentitemgroup},%
599         order={\number\currentorder},%
600         userorder={\currentuserorder},%
601         availablecolumns={\number\numexpr \tempa / \tempb\relax},
602         itemmaxwidth={\the\width_cit_max},
603         totalchoicenumber={\number\totalchoicenumber},
604         point={\questionparameter{c!point}},
605         answerstatus={\check_choice_answerstatus},
606         answer={\callcollection},]%
607     \dataset_collector[question][choice]%
608     \stopitemgroup\endgroup}

```

```

609 \setuptextbackground[env_answer]
610     [location=paragraph,width=local,
611     leftoffset=1ex,rightoffset=1ex,
612     %topoffset=.5ex,bottomoffset=.5ex,
613     before={\leftskip=0pt\startnarrower
614             \blank[force,halfline]},
615     after={\blank[halfline]\stopnarrower},
616     background=\answerparameter\c!background,
617     backgroundcolor=\answerparameter\c!backgroundcolor,
618     corner=\answerparameter\c!corner,
619     frame=\answerparameter\c!frame,
620     framecolor=\answerparameter\c!framecolor,
621     rulethickness=\answerparameter\c!rulethickness,
622 ]

```

## 第6部分 设置 answer 环境

在(v20241023)中,删除了 answer 环境的标签通过 description 来进行设置。整体环境通过 textbackground 环境进行设置。该环境具有 answer 和 point 的全部键值。同时,通过 label labelstyle labelcolor 来设置答案环境的标签。此外,還提供了一個特殊的鍵值 sctipt,該鍵值主要用於創建答題區域。該鍵值和 answer 鍵值是互斥的,不應該同時啟用。

`\answer` 是為師生兩版設置的命令。但目前該命令和相關設置還具有諸多不足之處。只需要將該環境置於題目下方,即可獲取當前題目設定

```
\startquestion[showanswer=true,answer={answer for \currentitemgroup}]
  該環境位於 \currentitemgroup。注意: \tex{answer} 可以獲取父環境或同級環境的答案而不必再次設置。
\startanswer[point=12]
\input knuthmath
\stopanswer
\stopquestion
\startquestion[showanswer=true,answer=\getanswerfromchoice]
  該環境位於 \currentitemgroup。注意: \tex{answer} 可以獲取父環境或同級環境的答案而不必再次設置。
\startchoice
  \startcitem{Some Words}\stopcitem
  \startcitem{Some Words}\stopcitem
  \startcitem[*]{Some Words}\stopcitem
  \startcitem{Some Words}\stopcitem
\stopchoice
\startanswer[point=1]
\input knuthmath
\stopanswer
\stopquestion
```

6. (answer for env\_question:1) 該環境位於 env\_question:1。注意: \answer 可以獲取父環境或同級環境的答案而不必再次設置。

答案: (12分)(B D)

Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by “blah” or some other grunting noise.

7. (C) 該環境位於 env\_question:1。注意: \answer 可以獲取父環境或同級環境的答案而不必再次設置。  
A. Some Words      B. Some Words      C. Some Words      D. Some Words

答案: (1分)(C)

Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by “blah” or some other grunting noise.

```
\startquestion[showanswer=true]
  該環境位於 \currentitemgroup。
\startproblem[showanswer=true,left={({},right={})},distance=1em,stopper={}]
\startpitem[showanswer=true,answer={Pitem 1}] 該環境位於 \currentitemgroup。 \stoppitem
\startanswer[point=10]
\input knuthmath
```

```

\stopanswer
\startpitem[showanswer=true,answer={Pitem 2}] 該環境位於 \currentitemgroup。 \stoppitem
\startanswer[point=20]
\input knuthmath
\stopanswer
\startpitem[showanswer=true,answer={Pitem 3}] 該環境位於 \currentitemgroup。 \stoppitem
\startanswer[point=30]
\input knuthmath
\stopanswer
\stopproblem
\stopquestion

```

8. () 該環境位於 env\_question:1。

(1) (Pitem 1) 該環境位於 env\_problem:2。

答案: (10分)( Pitem 1)

Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by “blah” or some other grunting noise.

(2) (Pitem 2) 該環境位於 env\_problem:2。

答案: (20分)( Pitem 2)

Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by “blah” or some other grunting noise.

(3) (Pitem 3) 該環境位於 env\_problem:2。

答案: (30分)( Pitem 3)

Many readers will skim over formulas on their first reading of your exposition. Therefore, your sentences should flow smoothly when all but the simplest formulas are replaced by “blah” or some other grunting noise.

```

623 \setupanswer[showanswer=true,
624     showpoint=true,
625     answer=\getanswerforanswer,
626     point=\getpointforanswer,
627     pointlabel={分},
628     pointstyle=\answerparameter{style},
629     pointcolor=\answerparameter{color},
630     answerstyle=\answerparameter{style},
631     answercolor=\answerparameter{color},
632     style=\ss,
633     labelstyle=\ss,
634     label={答案 : },
635     %before=,
636     %after=,
637     afteranswer={\par},
638     showscript=false,
639     %scriptcontent={},
640     %scriptbefore={},

```

```

641      %scriptafter={},
642      background=normalframeOL,
643      %backgroundcolor=,
644      %corner=,
645      %frame=,
646      %framecolor=,
647      %rulethickness=,
648      ]

649 \tolerant\protected\def\startanswer[#1]#:#2\stopanswer{\begingroup%
650   \env_answertrue%
651   \iffirstargument\setupanswer[#1]\fi%
652   \doif{\answerparameter{showscript}}{true}{\mode_showscripttrue}%
653   \answerparameter{before}%
654   \ifmode_showanswer%
655     \startenv_answer%
656     {\answerparameter{labelstyle}}%
657     \switchtocolour[\answerparameter{labelcolor}]%
658     \answerparameter{label}}%
659     \show_point_or_answer[answer][point]%
660     \show_point_or_answer[answer][answer]%
661     \useanswerstyleandcolor\c!style\c!color%
662     \answerparameter{afteranswer}#2
663   \stopenv_answer%
664 \else%
665   \ifmode_showscript%
666     \startenv_answer%
667     \answerparameter{scriptbefore}%
668     \answerparameter{scriptcontent}%
669     \answerparameter{scriptafter}%
670     \stopenv_answer%
671   \else\fi%
672 \fi%
673 \answerparameter{after}%
674 \endgroup}

```

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## 第7部分 设置 pitem,citem 命令

仅具有 answer point 和 reference 键值。

pitem 項目下如果含有 fillin 命令,可以通過 \getanswerfromfillin 來獲取答案請注意,不要同時為單個 pitem 或者 fillin 命令同時設置答案,這可能會引起答案無法正確獲取。

```

675 \setuppitem [%showpoint=false,
676     point=0,% 必須有預設值, 否則出現計數器錯誤(missing number)
677     pointstyle=\ttx,
678     %pointcolor=,
679     pointlabel={分},
680     %showanswer=false,
681     %answer=,
682     answerstyle=\ss,
683     answercolor=red,
684     %reference=,
685 ]
686 \tolerant\protected\def\startpitem[#1]{\begingroup%
687 \increaseQusetionID%
688 \iffirstargument\setuppitem[#1]\fi%
689 \startitem[\pitemparameter{reference}]%%
690 \ifnum\currentpitemnumber=0\currentpitemnumber=1\relax\fi%
691 \show_point_or_answer[pitem][point]%
692 \show_point_or_answer[pitem][answer]%
693 \set_count_itemlevel[env_problem:2][pitem]%
694 \global\cnt_step_point_temp=\pitemparameter{point}\relax%
695 \ifnum\cnt_step_point=0%
696 \global\cnt_step_point=\cnt_step_point_temp\relax%
697 \else%
698 \global\cnt_step_point=\numexpr\cnt_step_point+\cnt_step_point_temp\relax%
699 \fi}
700 \def\stoppitem{%
701 \dataset_collector[pitem][pitem]%
702 \stopitem\global\advance\currentpitemnumber by 1\relax\endgroup}

```

choice 只具有 showanswer 和 [\*](用于标记正确答案) 两个设置

```

703 \def\correct_choice#1#2{%
704 \ifmode_showanswer%
705 \doif{#1}{*}{%
706     {\doifelse{\choiceparameter{answerstyle}}{}}%
707     {\choiceparameter{answerstyle}}%
708     {\questionparameter{answerstyle}}%
709     \doifelse{\choiceparameter{answercolor}}{}}%
710     {\switchtocolour[\choiceparameter{answercolor}]}%
711     {\switchtocolour[\questionparameter{answercolor}]}%
712     #2}}%correct choice
713 \else#2\fi}
714 \def\get_citem_text[#1]{\setbox0=\hbox{#1}%
715 \width_cit = \the\wd0\relax%relax is neccessary

```

```

716 \ifdim \width_cit_max > \width_cit%
717 \width_cit_max = \width_cit_max%
718 \else \width_cit_max = \width_cit%
719 \fi}%%%% 遞歸計算出最大寬度

720 \tolerant\protected\def\startcitem[#1]*[#2]#:#3\stopcitem{% #1 correct answer
721 \ifsecondargument\setupcitem[#2]\fi% #2 options
722 \get_citem_text[#3]% #3 choice content
723 \processaction[\choiceparameter{showanswer}]{%
724 true=>\mode_showanswertrue,
725 false=>\mode_showanswerfalse,}%
726 \doif{#1}{*}{\choice_checktrue}%
727 \ifconditional\c_strc_itemgroups_horizontal% mode_horizontal
728 \ifnum\currentchoicenumber<1%
729 \currentchoicenumber = 1\relax%
730 \else\relax\fi%
731 \setcounter[currentchoicenumber][\currentchoicenumber]%
732 \setcounter[totalchoicenumber][\currentchoicenumber]%
733 \doif{#1}{*}{\savecounter[currentchoicenumber]}%
734 %if new collect command work well, savecounter can be deleted
735 \doif{#1}{*}{\collect{\convertnumber%
736 {\choiceparameter{numberconversion}}}%
737 {\currentchoicenumber}}}%
738 \else%
739 \ifnum\currentchoicenumber<1\relax%
740 \currentchoicenumber=1\relax%
741 \else\relax\fi%
742 \fi%
743 \startitem[\citemparameter\c!reference]
744 \ifconditional\c_strc_itemgroups_horizontal% mode_horizontal
745 \doifelse{#1}{*}{\correct_choice{#1}{#3}}{#3}%
746 \else%
747 \setcounter[currentchoicenumber][\currentchoicenumber]%
748 \setcounter[totalchoicenumber][\currentchoicenumber]%
749 \doifelse{#1}{*}{\correct_choice{#1}%
750 {#3}\savecounter[currentchoicenumber]}%
751 {#3}%if new collect command work well, savecounter can be deleted
752 \doif{#1}{*}{\collect{\convertnumber%
753 {\choiceparameter{numberconversion}}}%
754 {\currentchoicenumber}}}%
755 \fi%
756 \stopitem%
757 \advance\currentchoicenumber by 1\relax%
758 }

```

## 第8部分 定义同义命令

```

759 \def\pitem{\dosingleempty\pitem_indeed}
760 \def\pitem_indeed[#1]#2{
761   \startpitem[#1]{#2}\stoppitem
762 }
763 \def\citem{\dosingleempty\citem_indeed}
764 \def\citem_indeed[#1]#2{%
765   \startcitem[#1]{#2}\stopcitem%
766 }

```

谨慎使用下面的 `fragilecitem`,他并不安全。很有可能导致错误

```

767 \bgroup
768 \obeylines
769 \gdef\xcitem{\bgroup\obeylines\dosingleempty\doxcitem}%
770 \gdef\doxcitem[#1]#2
771   {\egroup%
772   \doifsomethingelse{#1}%
773   {\startcitem[#1]#2\stopcitem}%
774   {}%
775   \startcitem #2\stopcitem}%
776 \egroup
777 \let\fragilecitem\xcitem

```

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## 第9部分 設置 fillin 命令

該命令建議在 pitem 環境內進行使用。同時,為 pitem 的 answer 鍵設置 \getanswerfromfillin,這樣 pitem 命令就可以自動獲取內部的 fillin 命令的答案當然,同時由於 pitem 本身也有 answer 鍵值,可以通過該鍵值進行設定。

fillin 命令主要依靠 bar 命令實現的。基本上按照修改 bar 命令即可修改 fillin 命令。fillin 命令有兩個參考 textnote 的參數: empty 和 n。empty=yes,隱藏答案;empty=number 顯示數字;empty=none 顯示答案。n=\* 隱藏答案; n=NUMBER 控制 bar 的長度。

bar 主要有四種樣式,可以通過 mp 參數進行設置: rules:under:dots rules:under:dash

```

778 \definedataset[Fillin_collector]
779 \setupbar[fillin_text]
780   [ rulethickness=\fillinparameter{rulethickness},
781     foregroundcolor=\fillinparameter{foregroundcolor},
782     foregroundstyle=\fillinparameter{foregroundstyle},
783     continue=\fillinparameter{continue},
784     unit=\fillinparameter{unit},
785     order=\fillinparameter{order},
786     method=\fillinparameter{method},
787     dy=\fillinparameter{dy},
788     max=\fillinparameter{max},
789     width=\fillinparameter{width},
790     left=\fillinparameter{left},
791     right=\fillinparameter{right},
792     repeat=\fillinparameter{repeat},
793     color=\fillinparameter{color},
794     offset=\fillinparameter{offset},
795     empty=\fillinparameter{empty},
796     mp=\fillinparameter{mp}]
797 \setupfillin[%foregroundcolor=,
798   %before=,after=,
799   %left=,right=,
800   %repeat=,mp=
801   rule=fillin_text,% 引用 bar 命令
802   empty=none,
803   continue=yes,
804   unit=em,
805   order=foreground,
806   method=0,
807   %color=gray,
808   width=4em,
809   n=10,
810   dy=-0.4,
811   max=3,
812   offset=-.1,
813   rulethickness=.05,
814   foregroundstyle=\ss,]
815 \def\showanswer_for_fillin{%
816   \ifmode_showanswer\setupfillin[empty=none]%

```

```

817   \else\setupfillin[empty=yes]\fi}
818   \newcount\c_fillin_number

819   \tolerant\protected\def\fillin[#1]#:#2{\begingroup%
820   \iffirstargument\setupfillin[#1]\fi%
821   \removeunwantedspaces%
822   \global\advance\c_fillin_number by 1\relax
823   \edef\p_n{\fillinparameter\c!n}%
824   \edef\p_empty{\fillinparameter\c!empty}%
825   \edef\p_number{\number\c_fillin_number}%
826   \edef\currentbar{\fillinparameter\c!rule}%
827   \showanswer_for_fillin%
828   \fillinparameter\c!before\fillinparameter\c!left%
829   \ifx\p_n\wildcardsymbol
830     \donefalse
831     \ifx\p_empty\!yes
832       \donetrue
833     \else\ifx\p_empty\!number
834       \donetrue
835     \else\ifx\p_empty\!none
836       \donetrue
837     \fi\fi\fi
838     \ifdone
839       \setupbar[\currentbar][\c!empty=\!yes]%
840     \fi%
841     \inlinebar[\currentbar]\bgroup
842     \wordboundary#2%
843     \ifx\p_empty\!yes
844     \else\ifx\p_empty\!number
845     \else\ifx\p_empty\!none
846     \fi\fi\fi
847     \egroup
848   \else
849     \inlinebar[\currentbar]\bgroup
850     \wordboundary
851     \scratchcounter\numexpr\p_n\relax
852     \ifx\p_empty\!yes
853       \interwordspacesbefore\scratchcounter
854       \interwordspacesafter\scratchcounter
855     \else\ifx\p_empty\!number
856       \interwordspacesbefore\scratchcounter
857       \zwnj\runninghbox{\resetbar\p_number}\zwnj
858       \interwordspacesafter\scratchcounter
859     \else\ifx\p_empty\!none
860       \scratchcounter\numexpr\p_n/\plustwo\relax
861       \interwordspacesbefore\scratchcounter
862       \zwnj\runninghbox{\resetbar{#2}}\zwnj
863       \interwordspacesafter\scratchcounter
864     \else
865       #2%
866     \fi\fi\fi%

```

```
867 \egroup%
868 \fi%
869 \setdataset[Fillin_collector][\QusetionID][answer={#2}]%
870 \fillinparameter\c!right\fillinparameter\c!after%
871 \endgroup}
```

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## 第10部分 設置 material 環境

顧名思義,\material 環境用來放置大段文本材料。該環境比較特殊,它設置了多個子實例來進行更完善的設置。除了 \setupmaterial[number] 這個實例繼承了 \setupcounter 的全部鍵值之外,其他實例都是新定義的鍵值。

這些實例分別是:

- \setupmaterial[number] 設置該環境標題的**序號**;
- \setupmaterial[title] 設置該環境的**標題**相關的樣式;
- \setupmaterial[author] 設置該環境文章的**作者**相關的樣式;
- \setupmaterial[source] 設置該環境文章的**具體來源**的相關樣式。
- \setupmaterial[indicator] 設置該環境文章的**畫線序號文字**的相關樣式。

此外,title,author,source 的名稱是通過 \setupmaterial 來直接設置。此外,該環境具有一個特殊的子命令 \indicator 來標記文章中的提問的部分並進行添加數字標識—(一)畫線文字。因此,\setupmaterial 還具有一個鍵值 indicator 通過 indicator=reset 對 indicator 進行重置,每當開啓一個新的 material 環境。通過 indicator=continue 對 indicator 取消重置,它將持續計數。當然,也可以直接通過 \setupmaterial[indicator][reset=true] 來啓用重新計數

以上所有實例都具有以下鍵值: before after align style color 此外,\setupmaterial 可以通过 spacebefore 和 spaceafter 来控制环境前后的垂直距离

notice , if you want change [start = number] after a chapter , you should use \resetcount[COUNTER\_NAME] to reset current counter to the number of start you've setted. otherwise, you need put [start = number] before the chapter you want to reset the counter.

```
\setupmaterial[title][color=green]
\startmaterial[title={Knuth},author={Mos},source={Yelu}]
\input knuth
\stopmaterial
```

(一) Knuth

Mos

Thus, I came to the conclusion that the designer of a new system must not only be the implementer and first large-scale user; the designer should also write the first user manual.

The separation of any of these four components would have hurt T<sub>E</sub>X significantly. If I had not participated fully in all these activities, literally hundreds of improvements would never have been made, because I would never have thought of them or perceived why they were important.

But a system cannot be successful if it is too strongly influenced by a single person. Once the initial design is complete and fairly robust, the real test begins as people with many different viewpoints undertake their own experiments.

Yelu

```
872 \setupmaterial [\c!align=center,
873           \%c!color=,
874           \%c!style=,
875           \c!spacebefore=1em,
876           \c!spaceafter=1em,
877           \%c!title=,
878           \%c!author=,
879           \%c!source=,
880           \c!indicator=continue,
```

```

881         indent={first,always,2em},]
882 \setupmaterial [\c!number] [\c!before={({},\c!after={})},
883         \c!prefix=no,\c!start=0,
884         \c!style=\namedmaterialparameter\c!title\c!style,
885         \c!color=\namedmaterialparameter\c!title\c!color,
886         \c!numberconversion=cn,\c!way=\v!by\v!chapter]
887 \setupmaterial [\c!title] [\c!style=\ss\tfa,\c!color=,\c!align=center,
888         \c!before=,]
889 \setupmaterial [\c!author] [\c!style=\tf,\c!color=,\c!align=flushright]
890 \setupmaterial [\c!source] [\c!before=\par,\c!align=flushright]
891 \setupmaterial [indicator,indicator_helper]
892     [style=\ss\bf,before={ (~},after={~) },prefix=no,
893     numberconversion=cn,type=line,reset=false]

894 \def\material_counter_parameter#1%
895 {\begingroup
896   \def\currentmaterial{#1}%
897   \setupalign[\namedmaterialparameter\c!title\c!align]
898   \usematerialstyleandcolor\c!style\c!color
899   \namedmaterialparameter\currentmaterial\c!before
900   \incrementcounter[#1]\convertedcounter[#1]%
901   \namedmaterialparameter\currentmaterial\c!after
902   \endgroup}

903 \def\material_parameter#1%creat new element in material
904 {{\begingroup
905   \def\currentmaterial{#1}%
906   \setupalign[\namedmaterialparameter\currentmaterial\c!align]
907   \usematerialstyleandcolor\c!style\c!color
908   \namedmaterialparameter\currentmaterial\c!before
909   \rootmaterialparameter\currentmaterial
910   \namedmaterialparameter\currentmaterial\c!after
911   \par\endgroup}}

912 \tolerant\protected\def\startmaterial[#1]{\begingroup%
913   \lettonothing\currentmaterial%
914   \edef\p_indicator{\rootmaterialparameter\c!indicator}
915   \edef\p_reset{\namedmaterialparameter{indicator}\c!reset}
916   \processaction[\p_indicator][
917     reset=>\let\indicator_reset_helper\resetindicators,
918     continue=>\continue_countertrue\let\indicator_reset_helper\relax,]
919   \processaction[\p_reset][
920     true=>\let\indicator_reset_helper\resetindicators,
921     false=>\continue_countertrue\let\indicator_reset_helper\relax,]
922   \env_materialtrue%
923   \iffirstargument\setupcurrentmaterial[#1]\fi
924   \indicator_reset_helper
925   \usematerialstyleandcolor\c!style\c!color%
926   \blank[\rootmaterialparameter\c!spacebefore]
927   \startalignment[\rootmaterialparameter\c!align]
928     \material_counter_parameter\c!number
929     \material_parameter\c!title

```

```

930     \material_parameter\c!author
931     \stopalignment
932     \blank[\rootmaterialparameter\c!spaceafter]
933     \setupindenting[\rootmaterialparameter{indent}]
934 }
935 \def\stopmaterial{%
936     \material_parameter\c!source
937     \indicator_reset_helper
938     \endgroup}

939 \tolerant\protected\def\indicator[#1]#:#2{\begingroup%
940     \def\currentmaterial{indicator}
941     \iffirstargument\setupmaterial[indicator][#1]\fi%
942     \edef\indicator_type{\namedmaterialparameter\currentmaterial\c!type}%
943     \edef\indicator_reset{\namedmaterialparameter\currentmaterial\c!reset}%
944     \processaction[\indicator_type]%
945     [line=>\let\indicator_type\underbar,%
946     none=>\let\indicator_type\relax]%
947     \usematerialstyleandcolor\c!style\c!color%
948     \indicator_type{%
949     \namedmaterialparameter\currentmaterial\c!before%
950     \ifmode_check%
951     \ifenv_material\color[red]{material}\else\color[red]{\currentitemgroup}\fi%
952     \ifcontinue_counter\color[red]{continue}\fi%
953     \fi%
954     \ifenv_material%
955     \ifmode_check\color[red]{::indicator}\fi%
956     \incrementcounter[\currentmaterial]%
957     \convertedcounter[\currentmaterial]%
958     \else%
959     \ifmode_check\color[red]{::helper}\fi%
960     \incrementcounter[indicator_helper]%
961     \convertedcounter[indicator_helper]%
962     \fi%
963     \namedmaterialparameter\currentmaterial\c!after%
964     #2}
965 \endgroup}

966 \def\indicators{\convertedcounter[indicator]%%% TODO 增強該命令的用法
967     \incrementcounter[indicator]}
968 \def\resetindicators{\setcounter[indicator][0]%
969     \setcounter[indicator_helper][0]}

```

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## 第11部分 设置 close 环境

```

970 \cnt_closetest=1\relax
971 \tolerant\protected\def\closebar#1{
972   \startbar[underbar]
973   \scratchcounter\numexpr16/\plustwo\relax
974   \interwordspacesbefore\scratchcounter
975   \zwj\runninghbox{\resetbar{#1}}\zwj
976   \interwordspacesafter\scratchcounter
977   \stopbar}

```

close 環境近乎是單獨設計的。該環境主要使用兩個命令：`\startclose` 和 `\stopclose` 用來創建該環境，`\closechoice` 用來標記環境內的選項，該命令隨行文放置即可。選項無須再次在文章後放置，`\stopclose` 會自行放置。因為 close 環境的子項目 `\closechoice` 是通過 choice 環境設置的。因此，可以通過 `[*]` 來標記正確答案。

close 環境同樣繼承了 `answer` 的鍵值。此外設置了 `reset` 鍵來選擇是否每一篇重置選項的題號，其他的鍵值：`barcolor` `barstyle` 設置下劃線樣式 `before after style color` 用於整體環境 `width frame stopper distance` 用於選項前題號樣式

```
\startclose
```

On Oct. 11, hundreds of runners competed in a cross-country race in Minnesota. Melanie Bailey should have \closechoice[designed, followed, changed, finished] the course earlier than she did. Her \closechoice[delay, chance, trouble, excuse] came because she was carrying a \closechoice[judge, volunteer, classmate, competitor] across the finish line.

As reported by a local newspaper, Bailey was more than two-thirds of the way through her \closechoice[race, school, town, training] when a runner in front of her began crying in pain. She \closechoice[agreed, returned, stopped, promised] to help her fellow runner, Danielle Lenoue. Bailey took her arm to see if she could walk forward with \closechoice[courage, aid, patience, advice] . She couldn't. Bailey then \closechoice[went away, stood up, stepped aside, bent down] to let Lenoue climb onto her back and carried her all the way to the finish line, then another 300 feet to where Lenoue could get \closechoice[medical, public, constant, equal] attention.

Once there, Lenoue was \closechoice[interrupted, assessed, identified, appreciated] and later taken to a hospital, where she learned that she had serious injuries in one of her knees. She would have struggled with extreme \closechoice[hunger, pain, cold, tiredness] to make it to that aid checkpoint without Bailey's help.

As for Bailey, she is more \closechoice[worried, ashamed, confused, discouraged] about why her act is considered a big \closechoice[game, problem, lesson, deal] . "She was just crying. I couldn't \closechoice[leave, cure, bother, understand] her," Bailey told the reporter. "I feel like I was just doing the right thing."

Although the two young women were strangers before the \closechoice[ride, test, meet, show] , they've since become friends. Neither won the race, but the \closechoice[secret, display, benefit, exchange] of human kindness won the day.

```
\stopclose
```

On Oct. 11, hundreds of runners competed in a cross-country race in Minnesota. Melanie Bailey should have \_\_\_\_ 1 \_\_\_\_ the course earlier than she did. Her \_\_\_\_ 2 \_\_\_\_ came because she was carrying a \_\_\_\_ 3 \_\_\_\_ across the finish line.

As reported by a local newspaper, Bailey was more than two-thirds of the way through her \_\_\_\_ 4 \_\_\_\_ when a runner in front of her began crying in pain. She \_\_\_\_ 5 \_\_\_\_ to help her fellow runner, Danielle Lenoue. Bailey took her arm to see if she could walk forward with \_\_\_\_ 6 \_\_\_\_ . She couldn't. Bailey then \_\_\_\_ 7 \_\_\_\_ to let Lenoue climb onto her back and carried her all the way to the finish line, then another 300 feet to where Lenoue could get \_\_\_\_ 8 \_\_\_\_ attention.

Once there, Lenoue was \_\_\_\_ 9 \_\_\_\_ and later taken to a hospital, where she learned that she had serious injuries in one of her knees. She would have struggled with extreme \_\_\_\_ 10 \_\_\_\_ to make it to that aid checkpoint without Bailey's help.

As for Bailey, she is more \_\_\_\_ 11 \_\_\_\_ about why her act is considered a big \_\_\_\_ 12 \_\_\_\_ . "She was just crying. I couldn't \_\_\_\_ 13 \_\_\_\_ her," Bailey told the reporter. "I feel like I was just doing the right thing." Although the two young women were strangers before the \_\_\_\_ 14 \_\_\_\_ , they've since become friends. Neither won the race, but the \_\_\_\_ 15 \_\_\_\_ of human kindness won the day.

- |                   |              |                  |                |
|-------------------|--------------|------------------|----------------|
| 1. A. designed    | B. followed  | C. changed       | D. finished    |
| 2. A. delay       | B. chance    | C. trouble       | D. excuse      |
| 3. A. judge       | B. volunteer | C. classmate     | D. competitor  |
| 4. A. race        | B. school    | C. town          | D. training    |
| 5. A. agreed      | B. returned  | C. stopped       | D. promised    |
| 6. A. courage     | B. aid       | C. patience      | D. advice      |
| 7. A. went away   | B. stood up  | C. stepped aside | D. bent down   |
| 8. A. medical     | B. public    | C. constant      | D. equal       |
| 9. A. interrupted | B. assessed  | C. identified    | D. appreciated |
| 10. A. hunger     | B. pain      | C. cold          | D. tiredness   |
| 11. A. worried    | B. ashamed   | C. confused      | D. discouraged |
| 12. A. game       | B. problem   | C. lesson        | D. deal        |
| 13. A. leave      | B. cure      | C. bother        | D. understand  |
| 14. A. ride       | B. test      | C. meet          | D. show        |
| 15. A. secret     | B. display   | C. benefit       | D. exchange    |

```

978 \setupclose[%showanswer=false,
979     answer=\getanswerfromchoice,
980     reset=true,
981     %mp=.
982     answerstyle=\ss,
983     answercolor=red,
984     width=2em,% set order width
985     frame=off,% set order frame
986     stopper=.,% set order stopper
987     distance=.5em,% set order distance
988     after=\blank[halfline]]

989 \def\closechoice[#1]{%定義文章內的序號。這是用戶命令，用來記錄選項(定義選項列表)
990 \expandafter\gdef\csname close:\romannumerals\cnt_closetest\endcsname{#1}%
991 % cnt_closetest 用於標記選項列表，會隨著選項題目增加，無論是否啟用重置，該計數器都會記錄並自增
992 % 在生成選項序列時，該計數器可以進行：(1) 是否設置了選項 (2) 遞增出選項序列
993 % 該計數器屬於局域，每篇文章都會重置回 1。
994 \ifclose_counter_reset%
995 \begingroup%
```

```

996     \switchtocolour[\closeparameter{barcolor}]%
997     \closeparameter{barstyle}%
998     \closebar{\number\cnt_closetest}%
999     \endgroup%
1000 \else%
1001 \begingroup\let\par\relax% 將其封裝在局域，避免 par 命令失效
1002     \switchtocolour[\closeparameter{barcolor}]%
1003     \closeparameter{barstyle}%
1004     \startitemgroup[env_question][n,continue,text,nostopper]%
1005         [lefttext=\closebar,righttext=]%
1006         \item \setcounter [strc_close_counter][\currentitemnumber]%
1007         \savecounter[strc_close_counter]\relax%
1008     \stopitemgroup%
1009     \endgroup%
1010 \fi%
1011 \advance\cnt_closetest by 1\relax}

1012 \def\docloseitem#1{\startcitem #1\stopcitem}
1013 \def\close_order{%選項前的序號樣式，序號通過 tempa 設定
1014     \noindent\unskip%
1015     \inframed[width=\closeparameter{c!width},
1016         frame=\closeparameter{c!frame},
1017         foreground=color,
1018         foregroundcolor=\closeparameter{c!color},
1019         foregroundstyle=\closeparameter{c!style}]%
1020     \convertnumber{n}{\number\cnt_closetest_tempa}%
1021     \closeparameter{c!stopper}%
1022     \show_point_or_answer[close][answer]}%
1023     \hskip\closeparameter{c!distance}\relax
1024     \global\advance\cnt_closetest_tempa by 1\relax
1025     \unskip}
1026 \def\placeclosechoice{%
1027     \ifnum\cnt_closetest=1\relax
1028         \color{red}{it seems that there is no
1029             "closechoice" be setted,
1030             please check it!}%
1031     \fi%
1032     \scratchcounter\numexpr\cnt_closetest-1\relax
1033     \cnt_closetest=1\relax%
1034     \def\closetest_list{\csname close:\romannumerals\cnt_closetest\endcsname}%
1035     \useclosestyleandcolor{c!style}{c!color}%
1036     \dorecurse{\number\scratchcounter}{%
1037         \hbox{\hsize=\textwidth%
1038             \parentitemnumber=\currentitemnumber\relax
1039             \edef\currentuserorder{\number\cnt_closetest_tempa%放置在這裡才能正確獲取題號
1040                 \ifnum\rawcountervalue[Unicode_botlevel]=0\relax\else% 抽出 order 定義，
1041                 (\rawcountervalue[Unicode_botlevel])\fi}% 因為該環境沒有上級 question 環境
1042             \hbox{\close_order}\hbox}%
1043         \vtop}%
1044     \startchoice%
1045     \processcommacommand[\closetest_list]\docloseitem%

```

```

1046     \stopchoice%
1047   }}}%
1048   \advance\cnt_closetest by 1\relax}%
1049   \cnt_closetest=1\relax%
1050 }

1051 \tolerant\protected\def\startclose[#1]{\begingroup%
1052   \env_closetrue%
1053   \iffirstargument\setupclose[#1]\fi%
1054   \edef\p_reset{\closeparameter\c!reset}
1055   \ifx\p_reset\c!true%
1056     \close_counter_resettrue%
1057   \else\close_counter_resetfalse\fi%
1058   \restorecounter[strc_close_counter]% 继承 question 的序号
1059   \scratchcounter\rawcountervalue[strc_close_counter]%
1060   \ifclose_counter_reset\cnt_closetest_tempa=1\relax\else%
1061     \cnt_closetest_tempa=\number\scratchcounter%tempa 标记文章内的序号和选项前的序号
1062     \cnt_closetest_tempa=\numexpr\cnt_closetest_tempa+1\relax
1063   \fi\closeparameter\c!before%
1064 }
1065 \def\stopclose{%
1066   \closeparameter\c!after%
1067   \placeclosechoice%
1068   \endgroup%
1069 }

```



## 第12部分 設置 optclose 環境

該環境是 close 環境的變體,但目前並未對該環境進行更多的設置。該環境的主要命令有兩個:  
`\startoptclose` 和 `\stopoptclose` 用來創建該環境, `\ocitem` 用來標記環境內的選項,該命令隨行文放置即可。  
`\ocitem[answer=blabla]blablabla`

此外,還有一個特殊的命令, `\specialocitem` 僅具有 `answer` 鍵值。可以通過 `\setupocitem` 來調整該命令的樣式。該命令標記答案,且無須任何環境包裹。

```

1070 \setupocitem [%answer=,
1071             %color=,
1072             %point=,
1073             %showanswer=false,
1074             answerprelabel={answer: },]

1075 \def\startoptclose{
1076 \startitemgroup[env_question][n,continue,text,nostopper][lefttext=\closebar,righttext=]%
1077 \leftskip=0pt\relax
1078 \set_count_envlevel[env_question:1][question]%
1079 }

1080 \def\stopoptclose{
1081 \stopitemgroup}

1082 \setupocitem[answercolor=red,answerstyle=\ss,]

1083 \tolerant\def\ocitem[#1]#:#2%
1084 {\begingroup%
1085 \iffirstargument\setupocitem[#1]\fi%
1086 \useocitemstyleandcolor\c!style\c!color%
1087 \let\par\relax\increaseQusetionID%      %% 必須命令, 自增序號以備調用
1088 \item \show_point_or_answer[ocitem][point]%
1089 \set_count_itemlevel[env_question:2][ocitem]%% 必須命令, 設定序號
1090 \allowbreak\doifsomethingelse{#2}{(#2)}{}}%
1091 \show_point_or_answer[ocitem][answer]%
1092 \dataset_collector[ocitem][ocitem]%% 必須命令, 設定可調用信息
1093 \setcounter [strc_close_counter][\currentitemnumber]%
1094 \savecounter [strc_close_counter]%
1095 \endgroup}

1096 \def\specialocitem[#1]{\begingroup\let\par\relax%
1097 \setupocitem[#1]\useocitemstyleandcolor\c!style\c!color%%
1098 \startitemgroup[env_question][n,continue,text,nostopper][lefttext=\closebar,righttext=]%
1099 \item \ifenv_close\relax\else%
1100 \increaseQusetionID
1101 %\show_point_or_answer[ocitem][point]%
1102 \set_count_itemlevel[env_question:2][ocitem]%
1103 \show_point_or_answer[ocitem][answer]%
1104 \dataset_collector[ocitem][ocitem]%
1105 \setcounter [strc_close_counter][\currentitemnumber]%
1106 \savecounter [strc_close_counter]\fi%
1107 \stopitemgroup\removeunwantedspaces\endgroup}

```

Memoir Ever

## 第13部分 score

放置在 answer 環境內標記得分。

```

score\score{3}\
score\score[type=dotfill]{30}\
\resetscore\
score\score[type=cdotfill]{30}\
\setupscore[score=calculation]
score\score[type=space]{3}\
score\score[type=hfill]{3}\

1108 \newcount\cnt_step_score
1109 \def\score_calc#1{% only show number
1110 \newcount\cnt_step_score_temp%
1111 \global\cnt_step_score_temp=#1\relax%
1112 \ifnum\cnt_step_score=0\global\cnt_step_score=#1\relax\else%
1113 \global\cnt_step_score=\numexpr\cnt_step_score+\cnt_step_score_temp\relax%
1114 \fi\number\cnt_step_score%
1115 }
1116 \def\dotfill{\leavevmode%
1117 \xleaders\hbox to 0.25em{\hfil.\hfil}%
1118 \hfill\kern 0pt\relax}
1119 \def\cdotfill{\leavevmode%
1120 \xleaders\hbox to 0.25em{\hfil$\cdot$\hfil}%
1121 \hfill\kern 0pt\relax}

1122 \installnamespace {score}
1123 \installcommandhandler \???score {score} \???score
1124 \setupscore[style=\ssa,color=red,dotstyle=\ss,dotcolor=red,score=]

1125 \tolerant\protected\def\score[#1]:#2{\begingroup% format style
1126 \iffirstargument\setupscore[#1]\fi%
1127 \scoreparameter\c!before%
1128 \usescorestyleandcolor\c!style\c!color%
1129 \start\space\scoreparameter{dotstyle}%
1130 \switchtocolour[\scoreparameter{dotcolor}]%
1131 \doif{\scoreparameter\c!type}{\dotfill}%
1132 \doif{\scoreparameter\c!type}{space}{}%
1133 \doif{\scoreparameter\c!type}{hfill}{\unskip\hfill}%
1134 \doif{\scoreparameter\c!type}{dotfill}{\dotfill}%
1135 \doif{\scoreparameter\c!type}{cdotfill}{\cdotfill}%
1136 \space\stop\scoreparameter\c!left%
1137 \doif{\scoreparameter{score}}{#2}%
1138 \doif{\scoreparameter{score}}{default}{#2}%
1139 \doif{\scoreparameter{score}}{calculation}{\score_calc{#2}%
1140 \doif{\scoreparameter{score}}{complex}{#2 : \score_calc{#2}%
1141 \scoreparameter\c!right\scoreparameter\c!after%
1142 \par\endgroup}
1143 \def\resetscore{%
1144 \cnt_step_score_temp=0\relax%
1145 \cnt_step_score=0\relax%

```

```

1146 }
1147 \installnamespace {writingbox}
1148 \installcommandhandler \???writingbox {writingbox} \???writingbox
1149 \setupwritingbox[row=10,column=18,width=2em,height=2em,midheight=1em]
1150 \newcount \tbl_row
1151 \newcount \tbl_col
1152 \def\makewritingbox{\dosingleempty\makewritingbox_indeed}
1153 \def\makewritingbox_indeed[#1]{\begingroup%
1154   \tbl_row=\writingboxparameter{row} % yoko
1155   \tbl_col=\writingboxparameter{column} % tate
1156   \setupTABLE[split=yes]
1157   \setupTABLE[column][width=\writingboxparameter{width}]
1158   \setupTABLE[row][odd][height=\writingboxparameter{midheight}]
1159   \setupTABLE[row][even][height=\writingboxparameter{height}]
1160   \bTABLE
1161     \bTR \bTD[nc=\number\tbl_col] {} \eTD \eTR
1162     \dorecurse{\number\tbl_row}{
1163       \bTR
1164         \dorecurse{\number\tbl_col}{\bTD {} \eTD}
1165       \eTR
1166       \bTR \bTD[nc=\number\tbl_col] {} \eTD \eTR}
1167   \eTABLE
1168 \endgroup}

```

## 第14部分 模拟例子

```

1169 \dorecurse{200}{
1170 \expandafter\getrandomnumber \csname n_\romannumeral\recurselevel\endcsname {1} {20}}

1171 \dorecurse{200}{
1172 \expandafter\getrandomnumber \csname nn_\romannumeral\recurselevel\endcsname {1} {20}}

1173 \def\longtesttxt[#1]{%%1. \longtesttxt[\romannumeral 1]
1174 \ifcase\csname n_#1\endcsname%
1175 就像按 S 来响应错误一样。 \or%0
1176 这个例子不太完整，因为页码没有存储在有用的地方。 \or%1
1177 TeX 处理数学显示后，它将以以下项目添加到当前垂直列表中： 惩罚、胶水、实际显示、胶水和惩罚。 \or%2
1178 然而，它显示了一种增加或减少计数器的方法，并设置数字中的数字或相当于数字的罗马数字中的字母。 \or%3
1179 基本问题是“对 TeXbook 的页面引用应该如何出现在参考页面的描述区域中？” 这个例子显示了三种可能性。 \or%4
1180 正如 TeX 不会随机连字符单词一样，它也不会段落中的行之间随机打断数学表达式。 \or%5
1181 TeX 仅考虑在关系（例如 = 或 < ）或二进制操作（例如 + 或 × ）之后进行中断。 \or%6
1182 此命令提供对当前字体中所有字符的访问。号码应该在 0 -- 255 范围内。 \or%7
1183 Junkjunk.tex文件不包含任何有用的东西，但这些行说明了一种读取辅助文件的方法。 \or%8
1184 此命令将寄存器中的列表副本添加到当前列表中。 \or%9
1185 请注意，每个寄存器在创建后都会被初始化。 \or%0
1186 此命令提供了一种直接指定分隔符的方法。 \or%1
1187 数字应该是七个十六进制数字。 \or%2
1188 它的前导数字必须在 0-7 范围内。该数字用作类号，其余六位数字用作 \type{\delcode} 值。 \or%3
1189 Plain TeX 有二十多个定义，类似于：\type{\def\rceil{\delimiter"5265307 }}'。 \or%4
1190 这个定义意味着 \type{\rceil} 在家庭5（关闭），其小形式在家庭2位置"65，其大形式在家庭3位置"07"。 \or%5
1191 \type{\Delimiter} 指定了一个数学符号，并以两种方式工作。 \or%6
1192 当 TeX 寻找分隔符时（例如，在 \type{\left} 之后），它忽略了类数字，并使用剩余的六位数字作为 \type{
1193 \delcode}。 \or%7
1194 但是，当分隔符在其他上下文中出现时，右三位数字被删除，其余四位数字成为符号的 \type{\mathcode}。 \or%8
1195 对于 \type{\rceil}，这意味着 \type{\delcode} 是"265307， \type{\mathcode} 是"5265"。 \or%9
1196 它首先计算子公式在轴上方和下延伸的距离。接下来，它使 y 等于刚刚计算的最大距离的两倍。 \fi}

1197 \def\shorttesttxt[#1]{%%1. \shorttesttxt[i]
1198 \ifcase\csname nn_#1\endcsname%
1199 悬挂压痕的数量 \or%0
1200 段落中正线的宽度 \or%1
1201 开始一个没有缩进的新段落 \or%2
1202 告诉TeX尝试增加或减少段落中的行数 \or%3
1203 扩展令牌，但在到达非空间令牌之前什么都不做 \or%4
1204 只有当主垂直列表为空时，它才会结束当前工作 \or%5
1205 该命令在内部垂直模式下是不允许的 \or%6
1206 任意中断由三个字符序列组成 \or%7
1207 另一个无效号码被传递了 \or%8
1208 来自假部分的条件命令 \or%9
1209 线路需要转移的金额 \or%0
1210 用于指定显示样式 \or%1
1211 关系后断线的惩罚 \or%2
1212 此命令定义了宏 \or%3
1213 家庭的脚本字体 \or%4
1214 尺寸没有变化 \or%5

```

```

1215  额外的空间\or%6
1216  左边的段落\or%7
1217  当前线宽\or%8
1218  文本样式\or%9
1219  序列\fi}

1220  \def\choicenum[#1][#2][#3]{
1221    \ifnum\csname nn_#1\endcsname < 6
1222      \expandafter\startcitem[*]{\shorttesttxt[\romannumeral #2]} \stopcitem
1223    \else
1224      \expandafter\startcitem{\shorttesttxt[\romannumeral #3]} \stopcitem
1225    \fi
1226  }

1227  \newcount\LNUM\LNUM=1\relax
1228  \newcount\CNUM\CNUM=1\relax
1229  \newcount\DNUM\DNUM=1\relax
1230  \newcount\ENUM\ENUM=2\relax

1231  \def\example@choice#1{
1232    \setupquestion[point=2,answer=\getanswerfromchoice]
1233    \dorecurse{#1}{
1234      \startquestion
1235      \longtesttxt[\romannumeral\LNUM]\global\advance\LNUM by 1\relax
1236      \startchoice
1237      \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1238      \global\advance\CNUM by 1\relax\global\advance\DNUM by 2\relax\global\advance\ENUM by 2\relax
1239      \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1240      \advance\CNUM by 1\relax\advance\DNUM by 1\relax\advance\ENUM by 2\relax
1241      \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1242      \advance\CNUM by 1\relax\advance\DNUM by 1\relax\advance\ENUM by 2\relax
1243      \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1244      \advance\CNUM by 1\relax\advance\DNUM by 1\relax\advance\ENUM by 2\relax
1245      \stopchoice
1246      \startanswer
1247      \input knuthmath
1248      \stopanswer
1249    \stopquestion}
1250  }

1251  \def\example@fillin#1{
1252    \setupquestion[answer=,point=\getpointfrompitem]
1253    \setuppitem [point=3,answer=\getanswerfromfillin]
1254    \startquestion
1255    \longtesttxt[\romannumeral\LNUM]
1256    \def\fillinanswer{\shorttesttxt[\romannumeral\CNUM]}
1257    \startproblem
1258    \dorecurse{#1}{
1259      \startpitem
1260      \ifmode_showanswer DDD \else XXXX\fi
1261      \longtesttxt[\romannumeral\CNUM]\fillin[]{\fillinanswer}
1262      \stoppitem
1263      \startanswer

```

```

1264     \input knuthmath
1265     \stopanswer
1266     \global\advance\CNUM by 1\relax}
1267     \stopproblem
1268     \stopquestion
1269 }
1270 \def\example@pitem#1{
1271     \setupquestion[answer=,point=\getpointfrompitem]
1272     \startquestion
1273     \longtesttxt[\romannumeral\LNUM]
1274     \def\fillinanswer{\shorttesttxt[\romannumeral\CNUM]}
1275     \startproblem
1276     \dorecurse{#1}{
1277         \startpitem[answer={answer : \recurselevel},point={\number\CNUM\relax}]
1278         \longtesttxt[\romannumeral\CNUM]\stoppitem
1279         \startanswer
1280         \input knuthmath
1281         \stopanswer
1282         \global\advance\CNUM by 1\relax}
1283     \stopproblem
1284     \stopquestion
1285 }
1286 \def\example@material#1{
1287     \startmaterial
1288     \input knuthmath
1289     \stopmaterial
1290     \setupquestion[point=6,answer=\getanswerfromchoice]
1291     \dorecurse{#1}{
1292         \startquestion
1293         \longtesttxt[\romannumeral\LNUM]\global\advance\LNUM by 1\relax
1294         \startchoice
1295         \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1296         \global\advance\CNUM by 1\relax%
1297         \global\advance\DNUM by 2\relax%
1298         \global\advance\ENUM by 2\relax%
1299         \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1300         \advance\CNUM by 1\relax%
1301         \advance\DNUM by 1\relax%
1302         \advance\ENUM by 2\relax%
1303         \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1304         \advance\CNUM by 1\relax%
1305         \advance\DNUM by 1\relax%
1306         \advance\ENUM by 2\relax%
1307         \choicenum[\romannumeral\CNUM][\the\DNUM][\the\ENUM]
1308         \advance\CNUM by 1\relax%
1309         \advance\DNUM by 1\relax%
1310         \advance\ENUM by 2\relax%
1311         \stopchoice
1312         \startanswer
1313         \input knuthmath
1314         \stopanswer

```

```

1315   \stopquestion}
1316 }
1317 \def\example@close#1{
1318   \startclose
1319   \def\closechoice#1{\shorttesttxt[\romannumeral\DNUM]\global\advance\DNUM by 1\relax}
1320   \dorecurse{#1}{
1321     \dorecurse{3}{
1322       \longtesttxt[\romannumeral\CNUM]
1323       \global\advance\CNUM by 1\relax
1324       \closechoice[\closechoice, {\*}\closechoice, \closechoice]
1325       \longtesttxt[\romannumeral\CNUM]}
1326   \stopclose
1327 }

1328 \def\example@optclose#1{
1329   \startoptclose
1330   \def\closechoice#1{\ss\shorttesttxt[\romannumeral\DNUM]\global\advance\DNUM by 1\relax}
1331   \dorecurse{#1}{
1332     \dorecurse{3}{
1333       \longtesttxt[\romannumeral\CNUM]
1334       \global\advance\CNUM by 1\relax
1335       \ocitem[answer={\shorttesttxt[\romannumeral\DNUM]}]{\closechoice, \closechoice, \closechoice}
1336       \longtesttxt[\romannumeral\CNUM]}
1337   \stopoptclose
1338 }

1339 \def\example@specialoptclose#1{
1340   \startoptclose
1341   \def\closechoice#1{\shorttesttxt[\romannumeral\DNUM]\global\advance\DNUM by 1\relax}
1342   \dorecurse{#1}{
1343     \dorecurse{3}{
1344       \longtesttxt[\romannumeral\CNUM]
1345       \global\advance\CNUM by 1\relax
1346       \specialocitem[answer={\closechoice}]
1347       \longtesttxt[\romannumeral\CNUM]}
1348   \stopoptclose
1349 }

1350 \newcount\qid_in_chap\qid_in_chap=1\relax
1351 \def\resetanswerid{\qid_in_chap=1\relax}
1352 \def\typeanswerbychap{\dosingleempty\typeanswerbychap_indeed}
1353 \def\typeanswerbychap_indeed[#1]#2{% #1 = chapter number, 該命令會自行遞增計數器來獲取答案
1354   \iffirstargument\qid_in_chap=#1\relax\fi%
1355   \datasetvariable{Answer_collector}{#2-\the\qid_in_chap}{answer}%
1356   \advance\qid_in_chap by 1\relax}
1357 \def\typeanswerdirect#1{% #1 = qid, 需要自行輸入來獲取某個題目的答案
1358   \datasetvariable{Answer_collector}{#1}{answer}}
1359 \def\typeanswerlist{\dodoubleempty\typeanswerlist_indeed}
1360 \def\typeanswerlist_indeed[#1][#2]#3{%#1 = chapter number
1361   \ifsecondargument\qid_in_chap=#2\fi% #2 = from which question to start
1362   \dorecurse{#3}{% answer amount
1363     \datasetvariable{Answer_collector}{#1-\the\qid_in_chap}{answer}%

```



```

1364 \advance\qid_in_chap by 1\relax}
1365 }

1366 \newcount\answer@seq@tempa\answer@seq@tempa=0\relax%
1367 \newcount\answer@seq@tempb\answer@seq@tempb=0\relax%
1368 \newcount\answer@seq@tempc
1369 \def\type@answer@i[#1*#2,#3,#4]{% #1 for row #2 for column %
1370 % #3 chapter number #4 last answer id%
1371 \answer@seq@tempc=\numexpr#4-1\relax%
1372 \bTABLE
1373 \dorecurse{#1}{\bTR
1374 \dorecurse{#2}{%
1375 \ifnum\answer@seq@tempa>\answer@seq@tempc \bTD\TD\relax\else%
1376 \advance\answer@seq@tempa by 1\relax%
1377 \expanded{\bTD
1378 \datasetvariable{Answer_collector}{#3-\the\answer@seq@tempa}{userorder}
1379 \eTD}\fi}
1380 \eTR\bTR
1381 \dorecurse{#2}{%
1382 \ifnum\answer@seq@tempb>\answer@seq@tempc \bTD\TD\relax\else%
1383 \advance\answer@seq@tempb by 1\relax%
1384 \expanded{\bTD
1385 \datasetvariable{Answer_collector}{#3-\the\answer@seq@tempb}{answer}
1386 \eTD}\fi}
1387 \eTR}
1388 \eTABLE
1389 }

1390 \def\type@answer@ii{
1391 \answer_seq=0\relax
1392 \bTABLE
1393 \dorecurse{4}{\bTR
1394 \dorecurse{5}{
1395 \advance\answer_seq by 1\relax%
1396 \expanded{\bTD\the\answer_seq\TD}
1397 \expanded{\bTD
1398 \datasetvariable{Answer_collector}{\the\answer_seq}{answer}
1399 \eTD}}
1400 \eTR}
1401 \eTABLE}

```



## 第15部分 模式設置

```

1402 \definemode[teacher][keep]
1403 \definemode[student][keep]
1404 \definemode[check][keep]
1405 \doif{\moduleparameter{basicexam}{mode}}{teacher}{
1406   {\enablemode[teacher]}}
1407 \doif{\moduleparameter{basicexam}{mode}}{student}{
1408   {\enablemode[student]}}
1409 \doif{\moduleparameter{basicexam}{mode}}{}
1410   {\enablemode[student]}}
1411 \startmode[teacher]
1412   \mode_showanswertrue
1413   \mode_showpointtrue
1414 \stopmode
1415 \startmode[student]
1416   \mode_showanswerfalse
1417   \mode_showpointfalse
1418 \stopmode
1419 \protect
1420 \stopmodule
1421 \endinput

```

