



2022 12 30

	.....	3
( )	.....	3
( )	.....	3
( )	.....	4
	.....	4
( )	.....	4
( )	.....	4
( )	.....	5
( )	.....	6
	.....	7
( )	.....	7
1.	.....	7
2	.....	14
3	.....	19
4	.....	21
5	.....	26
6	.....	32
	.....	37
	.....	44
	.....	45
	.....	45
	.....	46

()

2022

()

2014

2021

2022

:

CAD/CAM/CAPP

;

97%

()

226

20

85

21

56

22

85

13

100%

4

4

3

2

;

2

7

6

1:21

()

1.

14

40

/

		m ²		
1		120	275	
2		235	400	
3		150	300	
4		280	350	
5		240	90	
6		200	55	
7		180	80	
8		145	60	
9		120	215	
10	3D	200	160	
11		80	135	
12	HSE	300	350	
13		160	120	
14		140	80	

2.

5G

CAD CAE CAPP CAM

40

3.

" "

" "

19

11

6

2

2

7

100%

1

1

"

"

2

1

()

1.

5

2

2

" " " "

2 " 1+X" "+" "

" X"

3

90%

23

5

:

()

1.

1

	1.1		

--	--

1.

2

“ ” “ ” “ ”

3

1)

5

2022

2)

:

—

赛

— 赛

—

.

3)

“ ”

“ ” “ ”

” “ ”

4

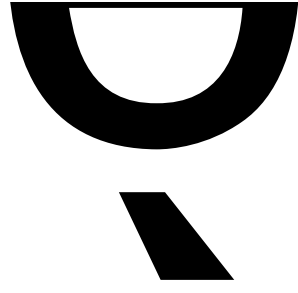
“ ”

“

”

70%

4



.d f

1.	:
2.	
3.	" "
4.	
5.	
6.	
7.	
8.	

2

	1.2
1.	
“ ”	
13	
“ ”	赛 赛

2

“

”

“

”

2

3

4

“

”

“

”

“

”

赛

“X”

“

”

“

”

1+X

1+X

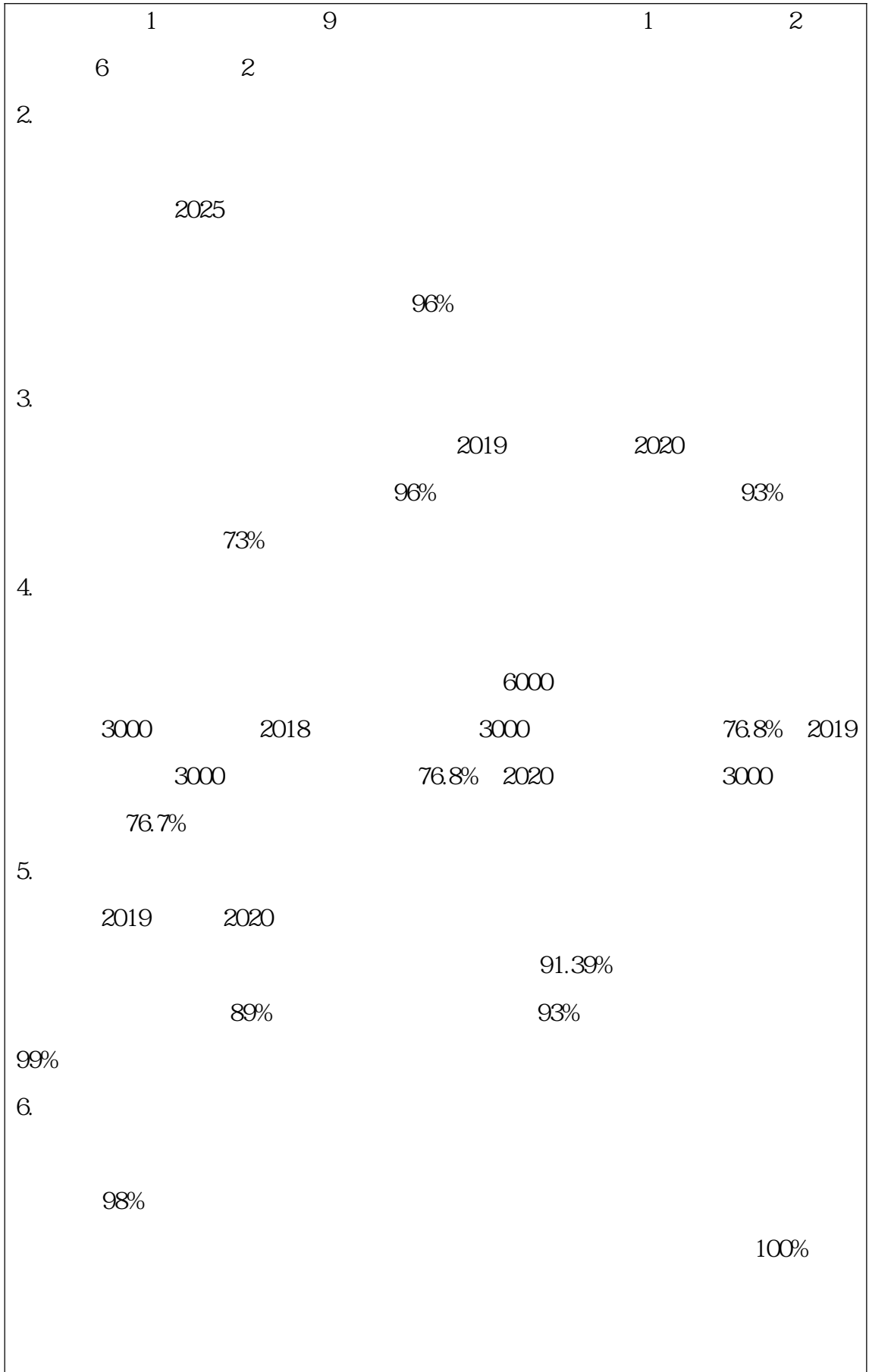
200

94%

5

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

	1.3																		
<table border="1" style="width: 100%; border-collapse: collapse; margin: 5px 0;"> <tr><td style="width: 50%; height: 20px;"></td><td style="width: 50%;"></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> <tr><td style="height: 20px;"></td><td></td></tr> </table>																			
1.																			



1.

2

3

4

5.

6.

1-2

1.

2

3.

4.

5.

	2.3		
--	-----	--	--

1.

2

3

4. CAD

5. NX

6.

7. NX

UG

8.

1.

2.

2.

3.

4.

3.

7



	3.1		
	-		
1			
2			
1.		CAD	
2			
			CAD/CAM
6			
3		/	
/			
		/	
4			
	CAD	1+X	
1.			
2			
3			
4			

1.			
2.		667	
3.			1346
4.		29	754
5.			288
1.			
[2019]13			
2.			
3.			
4.			

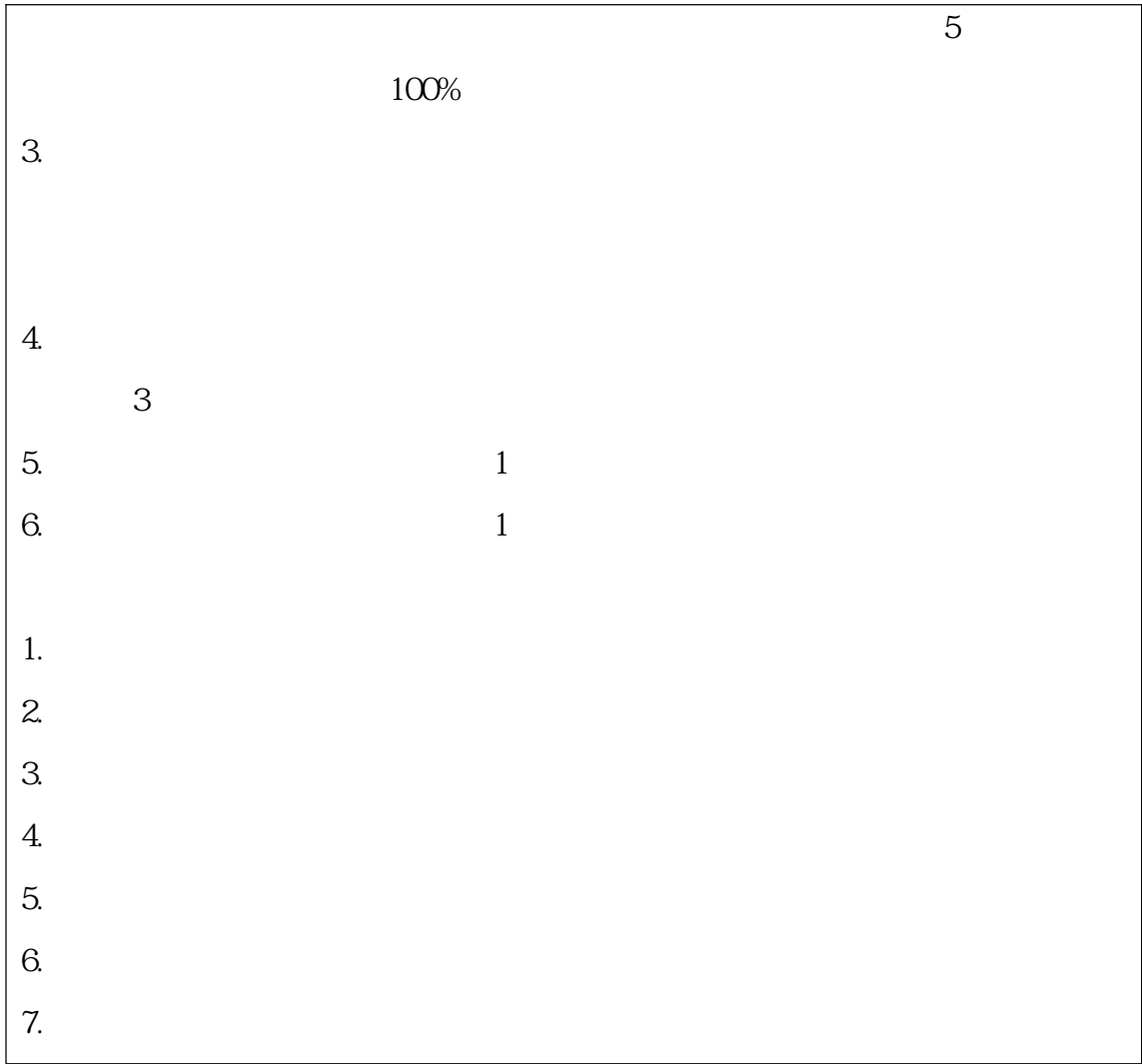
4.1.1	
4.1.2	
4.1.3	
4.1.4	
4.1.5	

" " 13
 6 2 9 4 6 3
 2 4
 1. 6 3
 1:20.1
 2 100%
 3 53%
 4 45 51%
 5 2 63%

--	--	--	--	--	--	--	--

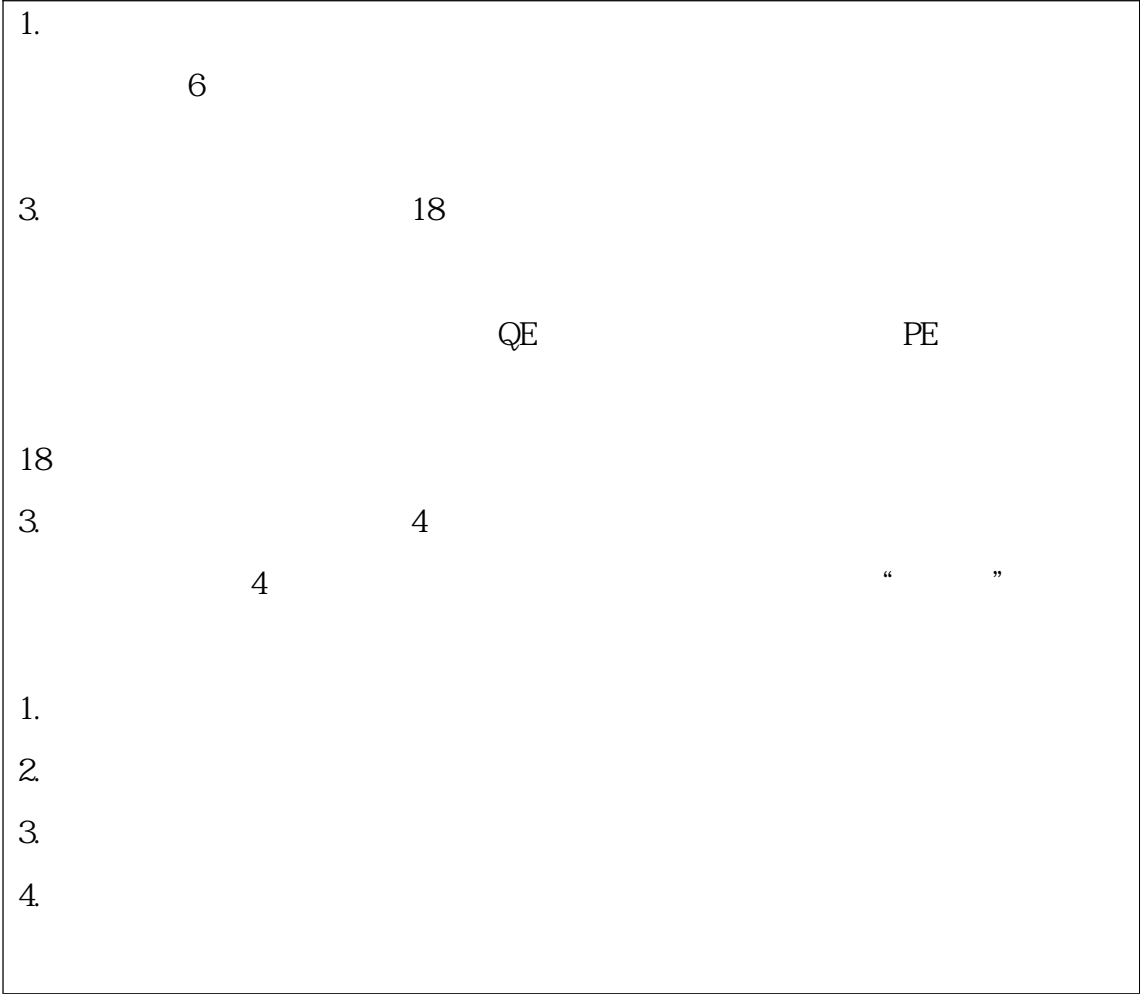
- 1.
- 2
- 3

1.		63%	
2	5	6	50%

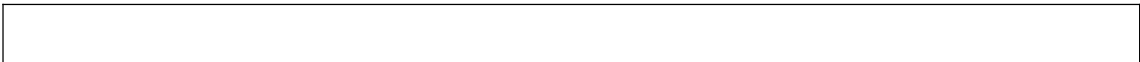


1.	
2	
	1
1.	
2	
3	
4	
5.	
6	
7.	

18	
4	



5.



--	--	--	--

1.

14

40

/

		m ²		
1		120	275	
2		235	400	
3		150	300	
4		280	350	
5		240	90	
6		200	55	
7		180	80	
8		145	60	

9		120	215	[REDACTED]
10	3D	200	160	[REDACTED]
11		80	135	[REDACTED]
12	HSE	300	350	[REDACTED]
13		160	120	[REDACTED]
14		140	80	[REDACTED]

2

“ ”

5

“ ”

“ ”

3

1.

2

3

4

5.

1.	3	4	
2.			
	314096	148000	98121
3.			
			5G
	2		1
2000			
4			
2021		30	
1.			
2.			
3.			
4.			

1.			
	9		
2.			
	2700	1545	
3.			
			6S
1.			
2.			
3.			
4.			
5.			

- 1. 8-20 1-16 29
- 180
- 2.
- 3.
- 4.
- 5. “ ”
- 6.
- “ ”
- 7. “ ”
- 8.
- “ ”
- 9.

10.

“ ”

1.

2.

3.

4.

5.

6.

17

<i>2022</i>			
1.			

18

1		2	
2			
1.			

1.		2	
		12	

2	
	4
1.	CAD
2	
3	
4	
	6
1.	CAD
2	
3	
4	
5	
6	
1.	
2	

	“ ”	
1.		-
2.		
3.	“ ”	-
1.		

	“ ”		
1.			-
2.			
3.	“ ”		-
1.			

<table border="1"> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>							
2							
1							
1.							

<table border="1"> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>							
	1500	107.75	4542				
		“	77.85				
	”						

1.
2.
3.

1.	
2021	
2022	"
2025"	

2

1. " "

2

3. $1+X$ "

2

3

4

2

"

"

"

"

"

"

"

"

" PDCA"

1.

2



	“ ”		
--	-----	--	--

1.

2025

赛

2

3

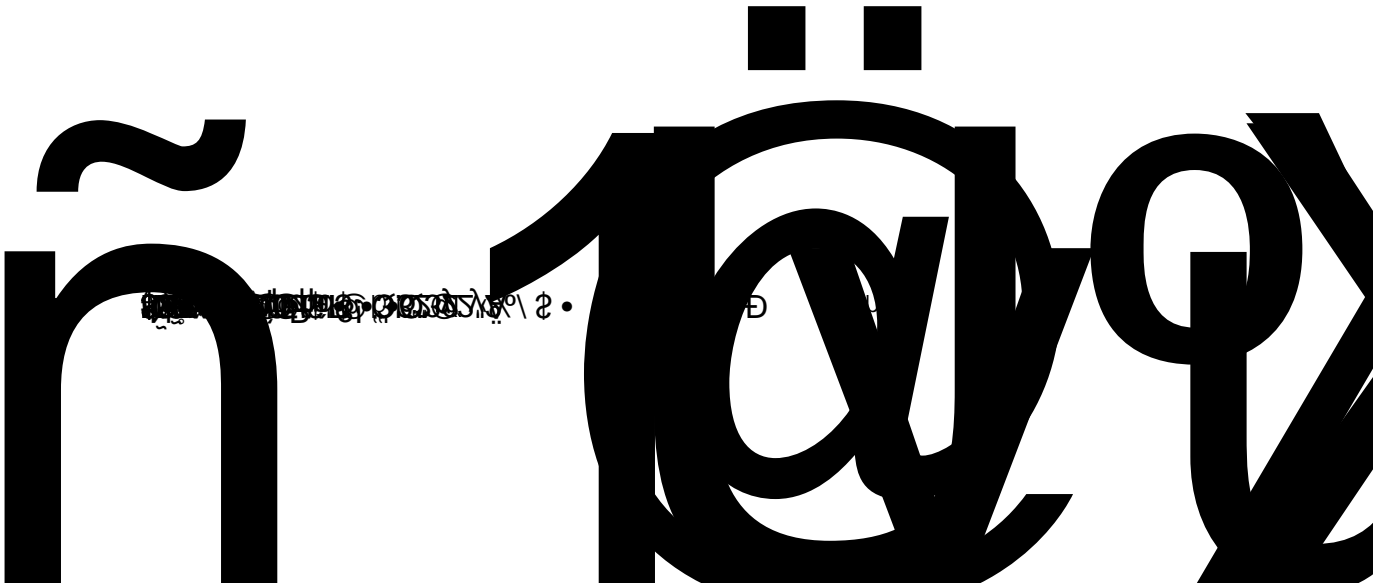
6

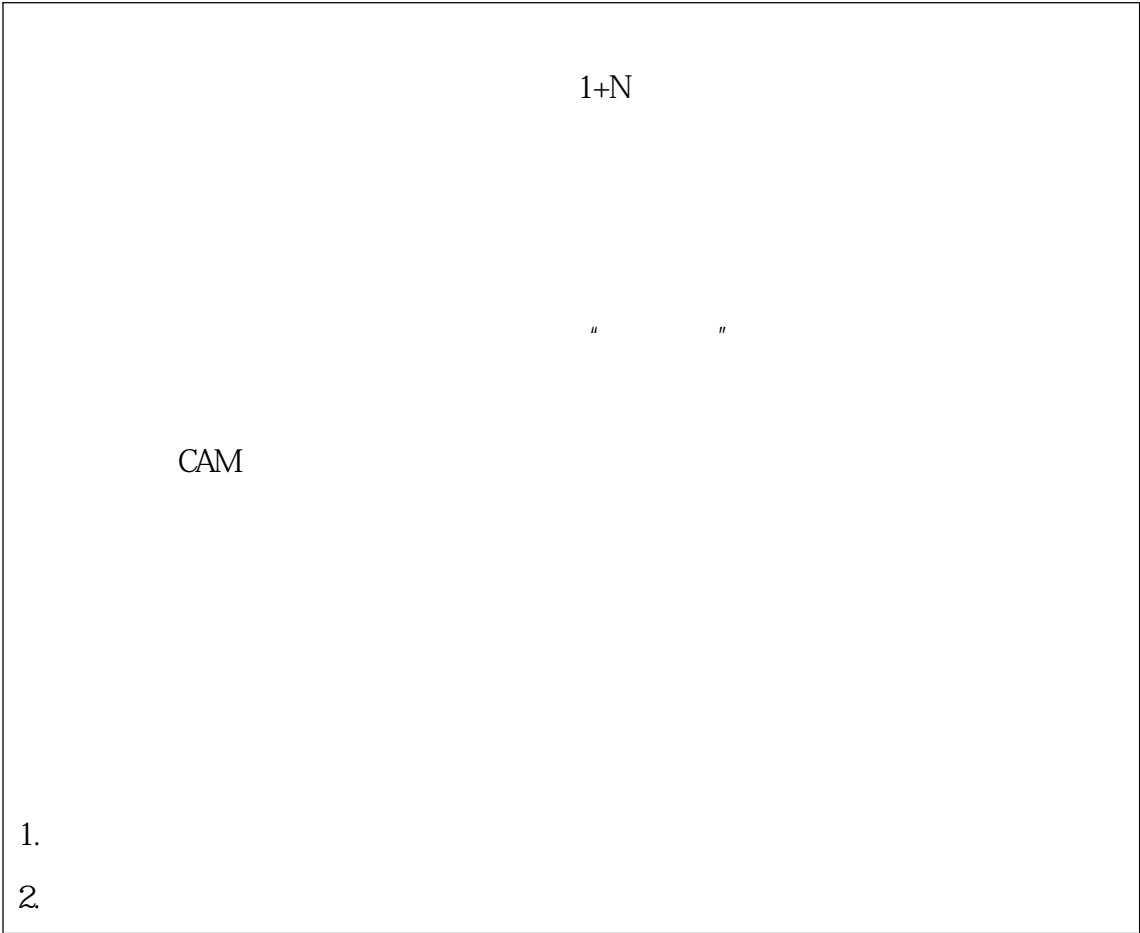
12

1. “ ”
2

3

p § | «





1.

2025

2.

3			
		2018	2020
	77.844		
4			
		2018-2022	
		“	”
“	”		
	“	”	
1.			
2			
1.		226	13
6			
2			

1.	1.1	
	1.2	
	1.3	
2.	2.1	
	2.2	
	2.3	
3.	3.1	
	3.2	
4.	4.1	
	4.2	
	4.3	
	4.4	
5.	5.1	
	5.2	
	5.3	
	5.4	
6.	6.1	
	6.2	
	6.3	
	6.4	
	6.5	
	6.6	
	6.7	
	1. 23	23
	2.	

1.	1.1	
	1.2	
	1.3	
2	2.1	
	2.2	
	2.3	
	2.4	
3“ ”	3.1	
	3.2	
	3.3	
4	4.1	
	4.2	
5.	5.1	
	5.2	
	5.3	
	5.4	
	5	16 0
	0	