Ta	21 (1)	25	0 × (I	+0.4)1	2 -1	11									
,	1 (1)	300	D× (I+	10.05	n - 1.	ш									
	(2)	带	育路	_											
)·n <	250×	1.4n								
				1	} y <	(B.7 %									
	(3)	30)×0	[HY])n <	250>	· (1+1)	งก							
						5/3-1									
						b									
	(4)	不能	;												
		300	o×(I	1+0.0	75) n	>300)×(H	0.05)n							
	(5)	5	5-1->	> 0											
		得	カ>	0.2											
T _{4.25}	(I)	ſΕ	ID	EX	ME	WB									
			IF	ID	EX	MΕ	WB								
				IF	ID	stall	EX	WE!	WB						
					IF	stall		EX		WB					
						stall	1F	ID	EX	ME!	WB!	(goo)			
								IF	ID		WE				
									IF	ID			WE!		
										IF	stall	ID	Eχ	ME!	WB!
	(2)	做无	用功	. 含	stall §	及没有	起作用	的周期	1						

(1)		-	-	Λ	1-	1	_	0	^	10				14	100	11	17	10	10	20		-						20	
	١					b	1	8	9	10	П	12	13	14	15	10	11	18	М	20	21	22	23	24	25	26	21	28	
	IF																												
	IF																												
bne x12, x13, To																													
5/1 ×5,×12,3					**																								
add xb.x10,x5					**																								
ld x7, O(xb))			IF	**				EX																				
ld x29 08 (xb)									ID																				
sub ×30,×7,×2	9					IF	**	**	ID	**	ΕX	ME	WB																
x, IIx, Ex bbc	5								IF		ID	EX	ΜE	wB															
sd ×30, 0(x3)								IF	"	ID	**	EX	ME	WB														
addi x12, x12,	2										IF	٠.	ID	EX	ME	WB													
one × 2, × 3,	Тор										IF	**	ID	11	EX	ME	WB												
slli ×5, ×12,	3												IF		ID	ΕX	ME	wB											
add xb, x10,	×5												IF	1.	ID	٠,	ΕX	ME	WB										
1d x7,0k	b)														IF	٠,٠	ID	٠.	EX	ME	WB								
ld x2908(x	6)														ŢF	٠.	ID	٠.	**	EX	ME	WB							
sub ×30, ×7,	×29																IF	٠.	1D	٠.	EX	ME	WB						
add ×31, ×11,	×5																IF	٠.	ID	٠.		EX	ME	WB					
sd ×30, 00	(31)																		IF	٠.	٠,	ID	EX	ME	WB				
oddi x12, x12	1000																		IF	٠,	٠,	ID	٠,	EX	ME	WB			
one ×12,×1		,																				IF	٠.	ID	EX	ME	WB		
sli x5, x1	110																					TF		ID		FX	ME	WB	

3) begz ×13, DONE	(4) begz x13, DONE
là ×12,0	li ×12,0
jal ENT	тор:
TOP:	s i ×5, ×12, 3
slli ×5, ×12, 3	add ×6.×10.×5
add ×b, ×10, ×5	ld ×7 , O(×b)
ld x7,0kb)	add(×3, ×11, ×5
ld x29, 8Kb)	ld ×29, 8(×6)
addi x12,x12,2	addi ×12, ×12, 2
4ub ×30, ×7, ×29	sub ×30,×7,×29
add ×31, ×11, ×5	sd ×30, 0(×31)
sd ×30,0(×31)	bne ×12, ×13, TOP
ENT:	DONE:

(5)																												
			١	2	3	4	5	Ь	7	8	9	10	11	12	13	14	15	16	רו	12	19	20	21	22	23				
cqz	×13	DONE.	IF	ID	EX	ME	WB																						
i×	(12 ,	0	IF	ID	、	EX	ME	WB																					
ili	×5,	×12,3		IF		ID	EX	ME	WB																				
add	×b,	×10, ×5	5	IF	٠,	ID	٠,	EX	MΕ	WB																			
ld	x٦,	0(xb)			IF	٠,	ID	ΕX	ME	WB																		
ıdd	×3	رالح ,ا	×5			IF	~	ID	EX	ME	WB																		
d,	×29	, 8 L×	6)					IF	IP	EX	ME	WB																	
ada	di >	<12, x	2, 2					IF	ID	EX	WE	wB																	
sub) ×	30, ×	7, ×2	9					IF	٠,	٠,	ID	EX	ME	WB														
sd	×	30,0	(× ⊰)						IF	**	11	IP	٠,	EX	ΜE	WB													
one	×	12,>	13, 7	OP								IF	٠,	ID	EX	ME	MB												
sli	į ×	5, x	12,	3								IF	٠,	ID	* 1	EX	ME	WB											
ado	,	ф, x	10, X	5										IF	٠,	ID	E×	MΕ	WB										
ld	×	٥ , ٦	(<u>4</u> ×											IF	٠,	ZD	EX	ME	WB										
ada	١,	د ک ا , ×	×راا	5												IF	ID	EX	ME	WE	}								
ld	×	29, 8	3 (×6)												IF	ID	**	EX	ME	WB								
ado	hi	×12,	X12,	2													ZF	ID	EX	/YE	WB								
suk)	×30,	(),x	29													IF	ID		EX	ME	WB							
sd	>	⟨30,	OK	31)														IF	, ,	ID	Ex	ME	WB						
bn	e .	×12,	×13,	TOP	12													IF	٠.	ID	EX	ME	WB						
sla	i :	×5,	X12,	3																圷	ID	EX	ME	WB					
ado	d	x6,	XIO,	, ×5																耳	ID		EX	ME	WB	V			

(b) D	速比 为1.2		
(n) b	egz ×13, DONE	(8)	begz ×13. DONE
ثا	X12,0		li ×12,0
TOP:			addi ×6, ×10, 0
5	li ×5,×12,3	To	P:
a	dd xb, x10, x5		(d×7, 0(×6)
a	dd x31, x11,x5		add ×31, ×11,×5
1	d ×7,0(xb)		ld x29, 8(xb)
1	d x29,81x6)		addi x12, x12,4
	d ×5, 16(xb)		ld x16, 16(x6)
	d x15, 24(x6)		sub x30, x7, x29
	di x12, x12,4		sd ×30, 0 (×31)
5	ub ×30, ×7, ×29		sub ×14, ×16, ×15
	ub ×14, ×5,×15		sd ×14, 16(x31)
	d ×30,0(x31)		add xb, x10, x5
5	d x14, 16(x31)		bne ×12, ×13, TOP
k	one x12, x13, TOP	pol	NE:
DONE	:		
(9) 加速	此为1.73		
(10) 54	-31.8相比 : 无陷塞/	结构冒险	<u>*************************************</u>
T4.32 (1) 消耗均为: 140+2	×70+60 = 3	40 pJ
12			
	14 +2×70+60+A	0=480 pJ	
G	3) 70/48=14.6%	•	
(4	·) 还有 jal 跳转		
ſŕ	6) 使印的延增加		
1	o)		