	Overview of simply typed 2-calculus	
- N		
	Rupes	
	AET (000) (HTV) THAXB (TIA) THAXB (TIA)	
	THA THE THE	
	THA THB (prd.) TAHB (cry) THAHB THA (app)	
	THAXB THAMB THB	
		-
1	EXERCISE Prove AXBLBXA	-
	(MxBE[AxB] (OS) (AxB)E[AxB] (OSC)	+
	AXBHAXB (TO AXBHAXB (TO)	
	AXBEB AXBEA (prd.)	
	AXBLBXA	
1	Derivable rules	
	THA T,A,B,AHC	
	T, BLA T, B, A, ALC	
£	Exercise: Paque:	
	- A -> B B -> C A -> C	
	A-BEFA-BB (OSS) AE FAB (OSS)	
	B-CE (B+C) (OSS) A-BHA-B AHA	
	B-) CHB-) C A, A-B, B-) CHA-B, A, A-B, B-) CHA (ODD)	
	A,A+B,B+C+B+C A,A+B,B+C+B	
	A-B, B-C, A+C (Cry)	
	A-B,B-C-A-C	
	A > B, A > C - A - B x C	
	A>BEJA+O3 (OS) AEJAJ (OSS) A+CEJA+CZOS) AEJAJ (OSS)	
	A-BHA-B AHA A-CHA-C AHA	
	A, A-B -A-B A, A-B+A (app) A, A-+C+A-C A, A-+C+A (app)	
	1 1 1 1 1 1	
	A, A > B, A > C - B A, A > C - C (prd)	1
	A A	10 11 -
	$A \rightarrow B, A \rightarrow C + A \rightarrow B \times C$ (Cry)	-

Simply-typed A-Colculus	-
Z: A E ( (ass) (triv) T - V: A x B (TTA)	
THX:A THX:A	
THV: A THU: B (prd) (, x: AHV: B (cry)	
TH <v,u7: -="" a="" a.v:="" axb="" thar:=""> B</v,u7:>	
THU: A -B THU: A (app)	
r+vu:B	
Examples of 7-terms	
x: A  - x: A (identity)	0
x: A + < x, x): A x A (duplication)	
2: AxB+ < TE2, TIJ27: BxA (SWap)	
G: A→B, g: B→C + Ax: A. g(Bx): A→C (composition)	
30	
Exercise Bured a 2-term &: A-B, g: A-C L?: A-BxC	
8: A = B, g: A = C + 72: A: (B2, g2): A = BxC	
	1 . 1 . 7 . 7 . 6 . 6 . 6
Pasic Casts about Runctions	
Treveal: !: X -> { *}=1 !(21) = *	
Pair: < 8,97: X -> AxB < 8,97(2) = (82,92)	10-1-1
Projections: TIA: XXY -> X TIA (70, Y): 72	0
To: XXY -> Y Ta(24, Y) = Y	
Curry: 28: X -> ZY 28(21=(Y +> B(21,41)	
App: $Z' \times Y \rightarrow Z$ app( $\theta, y$ ) = $\theta y$	
11 0.0 0 0	
Functional Semantics	
Types A are interpreted as sets [A]	
[1]={x} [AxB]=[A]x[B] [A-B]=[B]	
A typing context T is enterpreted as	
[[] = [24: Asx x 22n: An] = [As] x x [An]	
	8
A A-term Th. V. A se sala	
A 2-term T + V: A is interpreted as a Bunction	
ITHV: A]: [r] - [A]	

-	74: AET [THY: AXB] = B	
	[THX:A]=Ti [THX:1]=! [THTIV:A]=TIA.B	
	[r+v:A]=& [r+u:B]=& [r, 2:A+V:B]=&	
	[r+ <v,u>: AxBJ=&lt;6,9&gt; [r+2x:A.V:A-B]=28</v,u>	
	Tour other Tours	
	ITHV: A > BJ=B [THU: AJ=8	
	[r+VU:B]=app. <8,9>	
	Exercises: Prove:	
	[2: A V: B   TALR, Y 7: A] = [2: A, Y: B   n: A]	
7	[r:A,y:B+TIZ <xiy>:A]</xiy>	
	2	
	111. [x: A, y: B - < 2, y >: A x B]	
	112 · < [ κ: A, y: B+ κ: A], [κ: A, y: B+ y: B] >	
	114. CLR. H, Y, OF R. HJ, LWH, Y, OT 7. U.S.	
	[x:A,y:B+x:A]	
	and grado	
	[THV: Axel= [TH< TAV, TZV): Ax B. I nos serdes	
	[r+< 112V, TEV>: AxB]	
	KFr+ TaV: AI, Ir+TaV: BI>	
	=	
	< TI4. [r+V:AxB], TI2. [r+V.AxB]>	
	< TIA, TIEZ. [r+V: AXB]	
	id. Irtv: AxBI	
	[r+v.AxB]	
		3

		-
100		-
	T. C. A. T. T. L. S. M.T.	
	[-+ (2x. x+1) 2: IN] = [-+3: IN]	
	[-+(Ax, xx) a: IN]	
		145 I.J. 124.
	app. < [-+ (ax. x+1): IN-IN], [-+2: IN]>	
	app. < a [z: IN + ze+1: IN], [-+2: IN])	
	app. CALE: INT RET. INT.	
	app · < A succ, a)	
_	Succ 2	
	Succ &	
_		•
	3	
_	I-+3:INI	
	U-F5: IV J	
-		
		The same of the sa
3		
-		
		4
100		