

COS 109 Final Exam, Fall 2024

December 14-19, 2024

3 hours 180 points total

You may do this exam in any 3-hour period. When you are finished, return the exam to room 311 in the CS building, or scan it (or just the answers) and email it to bwk@cs.princeton.edu. You must return it by 5:00pm EST on Thursday December 19. I would appreciate it if you could tell me how you plan to return it so I know where and when to look, but it's not a requirement.

Please PRINT your name here _____

Honor Pledge: "I pledge my honor that I have not violated the Honor Code during this examination."

Please write the pledge in full and sign it:

This examination is open-book and open-note:

- you may use the textbook, course notes, your own notes, corrected problem sets and solutions, old exams and answer sheets from the course web page, lab instructions, etc.
- you may use a calculator.
- you may not use anything else; specifically, you may not use a computer, phone or tablet (except that you can use a calculator program on one of these, and you can use your computer to view course notes, answer sheets, etc.). No other Internet use is allowed.

There are 180 points for the questions; use the point values for each question to allocate your time (one point per minute). If you're writing or calculating a lot on a question, you may be off on the wrong track.

Write your answers directly on these pages; use the back if necessary. In general, be brief, but if you need more space, attach extra pages and make sure your name is on every extra page. Please write legibly -- I can't grade it if I can't read it. [You can submit just the answers if that makes scanning easier.]

Good luck.

1. (50 pts)

2. (25 pts)

3. (105 pts)

Total

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL	SOH	STX	ETX	EOT	ENQ	ACK	BEL	BS	HT	LF	VT	FF	CR	SO	SI
1	DLE	DC1	DC2	DC3	DC4	NAK	SYN	ETB	CAN	EM	SUB	ESC	FS	GS	RS	US
2	SPC	!	"	#	\$	%	&	'	()	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{		}	~	DEL