CS 173, Fall 2016 Examlet 11, Part B NETID:										
FIRST:	LAST:									
Discussion: Thursday 2 3 4	5 Friday 9 10 11 12 1 2									
(15 points) Check the (single) box that best char	cacterizes each item.									
T(1) = d $T(n) = 2T(n/2) + c$ $\Theta(n)$ $\Theta(n \log n)$	$\log n)$ $\Theta(n^2)$ $\Theta(2^n)$									
sively defined by $T(1) = d$ and $T(n) =$	T(n/2) + c $T(n/2) + cn$									
For a problem to satisfy the definition of NP, a "yes" answer must have a succinct justification.	true false									
Finding a value in a sorted array is $\Theta(2^n)$.	rue false									
The Marker Making problem can be solved in polynomial true	false not known									

CS 173, Fall 2016 Examlet 11, Part B	NE	TID):								
FIRST:				$\mathbf{L}\mathbf{A}$	ST:						
Discussion: Thursday	2	3	4	5	Frie	day 9	10	11	12	1	2
(15 points) Check the (single) bo	x that	best	chara	cter	izes ea	ch iten	1.				
$T(1) = d$ $T(n) = T(n-1) + n$ $\Theta(n)$	n)	Θ	$O(n^2)$		$\Theta(i)$	$n \log n$		$\Theta(2^n)$			
T(1) = d $T(n) = 4T(n/2) + n$	$\Theta(n)$ $\Theta(n^{\mathrm{ld}}$	og ₃ 2)				$\log n$)		$\Theta(n^2)$ $\Theta(2^n)$			
Problems in class P (as in P vs. require exponential time	NP)		tru	е [false		not	known		
The running time of the Towers solver is $\Theta(n!)$	of Har	noi	tru	e [fal	5e				
Producing all parses for a sentence requires exponential time.	true	9		fals	se _		not kno	wn			

CS 173, Fall Examlet 11,	_	NE'	TID	•						
FIRST:				\mathbf{L}_{2}	AST:					
Discussion: T	hursday	2	3	4 5	Friday 9	10	11	12	1	2
(15 points) Check the	(single) box	that	best o	characte	rizes each iter	n.				
T(1) = d $T(n) = T(n/2) + n$	$\Theta(n)$,) [Θ($(n \log n)$	$\Theta(n^2)$)	$\Theta(2^n)$			
Algorithm A takes 2^n input, A takes x time it take if I add one to	How long v	vill	x + 2	2	2x	2^x		x^2		
Problems in NP need exponential time true false not known										
Producing all parses for a sentence.		polyı	nomia	l	exponenti	al	in	NP		
The chromatic number nodes can be found in			n	true	false		not	known]

CS 173, Fall 2016 Examlet 11, Part B NETID:												
FIRST:					LA	ST:						
Discussion:	Thursday	2	3	4	5	Frid	ay 9	10	11	12	1	2
(15 points) Check	the (single) box	k that	best o	chara	acteri	zes eac	h item.					
T(1) = c $T(n) = 2T(n/2) + 1$	$\vdash n$ $\Theta(n)$	<i>a</i>)	Θ	$(n \log$	g n)		$\Theta(n^2)$		$\Theta(2^n)$			
Algorithm A take one input, A take will it take if I do	s x time. How lo	ong	x + 1	ı [2x		2^x		x^2		
Problems in class be solved in polyr	•	NP) o	ean	tru	ie [false		not	known		
The running time solver is $O(n!)$	e of the Towers	of Hai	noi	tru	ie [false					
The Travelling Sa Problem	llesman	poly	nomia	l [expo	onentia	l	in	ı NP		

CS 173, Fall 2016 Examlet 11, Part B	NE	NETID:									
FIRST:				LAST:							
Discussion: Thursday	2	3	4	5	Friday 9	10	11	12	1	2	
(15 points) Check the (single) bo	x that	best	chara	acter	izes each iten	1.					
T(1) = d $T(n) = 3T(n/2) + n$	$\Theta(n)$ $\Theta(n^{\mathrm{lo}}$]	$\Theta(n \log n)$ $\Theta(n^{\log_2 3})$		$\Theta(n^2)$ $\Theta(2^n)$				
The running time of the Towers solver is recursively defined by $T(n) = 0$					$1) + c \qquad $ $(2) + c \qquad $	`	(n-1)				
For a problem to satisfy the def- "no" answer must have a succinc				${ m tr}$	ue 🗌	false					
The solution to the Tower of Hanoi puzzle with n disks requires $\Theta(2^n)$ steps	true [fa	alse	not	known					
The Marker Making problem can be solved in polynomial time.	true			fals	se	not kno	wn				

CS 173, Fall 201 Examlet 11, Par	_ 1\	ETIE):							
FIRST:				LAS	T:					
Discussion: Thurs	sday 2	3	4	5 I	Friday 9	10	11	12	1	2
(15 points) Check the (sing	gle) box tha	at best	chara	acterize	s each item.					
T(1) = d T(n) = T(n-1) + c	$\Theta(n)$	e	$\Theta(n\log n)$	g(n)	$\Theta(n^2)$		$\Theta(2^n)$			
Algorithm A takes n^2 time input, A takes x time. How it take if I double the input	v long will	x +	1		2x	4x		x^3		
Problems in class NP (as in be solved in exponential times) can	tru	ie	false		not	known		
Deciding whether an input expression be made true by priate choice of input value	appro-	polyno	mial		exponen	tial		in NP)	
Marker Making p	olynomial		ex	ponent	ial	in Nl	p			