CS 173, Fall 2016 Examlet 11, Part B NETID:								
FIRST:	AST:							
Discussion: Thursday 2 3 4 5 (15 points) Check the (single) box that best characters								
T(1) = d $T(n) = 2T(n/2) + c$ $\Theta(n) \boxed{\checkmark} \Theta(n \log n)$	a) $\Theta(n^2)$ $\Theta(2^n)$							
sively defined by $T(1) = d$ and $T(n) =$	2) + c							
For a problem to satisfy the definition of NP, a "yes" answer must have a succinct justification. true $\sqrt{}$ false								
Finding a value in a sorted array is $\Theta(2^n)$. true								
The Marker Making problem can be solved in polynomial true factories.	alse							

CS 173, Fa Examlet 11		NET	ΓID:								
FIRST:				LA	ST:						
Discussion:	Thursday	2	3 4	5	Frida	ay 9	10	11	12	1	2
(15 points) Check	the (single) box	that b	est cha	aracter	izes each	item.					
T(1) = d $T(n) = T(n-1) - d$	$+n$ $\Theta(n)$	<i>i</i>)	$\Theta(n^2)$	2) v	$\Theta(n)$	$\log n)$		$\Theta(2^n)$			
T(1) = d $T(n) = 4T(n/2) + 4T(n/2$	- n	$\Theta(n)$ $\Theta(n^{\log})$	g ₃ ²)		$\Theta(n\log_2\Theta(n^{\log_2}))$	_		$\Theta(n^2)$ $\Theta(2^n)$			
Problems in class require exponentia		NP)	t	rue [false	$\sqrt{}$	not	known]
The running time solver is $\Theta(n!)$	e of the Towers	of Hand		rue [false					
Producing all p	parses for a										

false

true $\sqrt{}$

not known

sentence requires exponential

time.

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Discussion:	Thursday	2	3	4	5	Friday 9	10	11	12	1	2
(15 points) Check	the (single) box	k that	best	t char	acteri	zes each item.					
T(1) = d $T(n) = T(n/2) +$	n $\Theta(n)$	n) [-	✓	$\Theta(n \log n)$	$\log n)$	$\Theta(n^2)$		$\Theta(2^n)$			
Algorithm A take input, A takes x t it take if I add on	time. How long v	will	x +	- 2		$2x$ $\sqrt{}$	2^x		x^2		
Problems in NP responential time	need true	е		false	е	not kno	own	$\sqrt{}$			
Producing all par for a sentence.	ses	poly	nom	ial [exponentia	l 🗸	ir	ı NP		
The chromatic nunodes can be four	U -			trı	ıe [false		not	known	ιv	/

CS 173, Fall Examlet 11,		NET	ID:								
FIRST:				LA	ST:						
Discussion:	Γhursday	2 3	3 4	5	Frida	ay 9	10	11	12	1	2
(15 points) Check th	ne (single) box	that b	est cha	racteri	izes each	item.					
T(1) = c $T(n) = 2T(n/2) + n$	$\Theta(n)$)	$\Theta(n \mathbf{l})$	$\log n$)	$\sqrt{}$	$\Theta(n^2)$		$\Theta(2^n)$			
Algorithm A takes x one input, A takes x will it take if I doubl	time. How lo	ng	c + 1	$\sqrt{}$	2x		2^x		x^2		
Problems in class NI be solved in polynomial	`	NP) car		rue [false		not	known	V	/
The running time of solver is $O(n!)$	f the Towers of	of Hano	i tı	rue	$\sqrt{}$	false					
The Travelling Sales Problem	man	polyno	omial		expo	nential		in	NP		

CS 173, Fa		NETID:									
FIRST:					\mathbf{L}^{A}	AST:					
Discussion:	Thursday	2	3	4	5	Friday 9	10	11	12	1	-
(15 points) Check	the (single) box	x that	best	char	acter	izes each item.					
T(1) = d $T(n) = 3T(n/2) - 3T(n/2$	+ n	$\Theta(n)$ $\Theta(n)$	$\log_3 2$			$\Theta(n \log n)$ $\Theta(n^{\log_2 3})$	√	$\Theta(n^2)$ $\Theta(2^n)$]	
The running time solver is recursive and $T(n) =$						$1) + c \qquad \boxed{\checkmark}$ $(2) + c \qquad $		T(n/2)			
For a problem to "no" answer mus	*					ue	false				
The solution to the Hanoi puzzle with requires $\Theta(2^n)$ st	h n disks	true		į	false	not i	known				

false

true

not known

The Marker Making problem can be solved in polynomial

time.

CS 173, Fa		NI	ETII	D:							
FIRST:					LA	ST:					
Discussion:	Thursday	2	3	4	5	Friday 9	10	11	12	1	2
(15 points) Check	the (single) box	k tha	t best	t chara	acteri	izes each item.					
T(1) = d $T(n) = T(n-1)$	$+c$ $\Theta(r$	<i>a</i>)	$\sqrt{}$	$\Theta(n \log n)$	$\log n)$			$\Theta(2^n)$			
Algorithm A take input, A takes x to it take if I double	time. How long v		x +	- 1		2x	4x	$\sqrt{}$	x^3		
Problems in class be solved in expo	•	NP)	can	trı	ue [$\sqrt{}$ false		not	knowr	n	
Deciding whether expression be made priate choice of in	de true by appro-		oolyno	omial		exponen	tial [in NF) \[\]	/
Marker Making	polynom	ial		ех	xpone	ential	in N	P 1/]		