Moon and Star





Designed and made by Diniar Namdarian, 2016; sleeve by J. A. Storer. (laser cut plastic, 3+9/16" x 6+3/8" x 3/8" thick)

A two layer puzzle where the top tip of the moon overlaps (but is not attached to) the square next to it (and the raised tray edges prevents that tip from overlapping edges). Here are steps 1 through 40 from solutions provided by the puzzle directions for Problem 1:



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Moon and Start Position Notation

In the solutions to follow, for each position, the bottom layer is to the left of the vertical row of \$'s, and the top layer is to the right. For example, here are steps 0 to 2 of Problem 1 solution:

#0):								
A	A	1	1	\$	A	A	A		
A	A	1	1	\$	A	A			
в	в			\$	в	в			
в	В			\$	В	в			
С	С	D	D	\$	С	С			
С	С	D	D	\$	С	С	D		
2	2	S	S	\$					
2	2	S	S	\$					
#1	L.	Мо	ove	e I	DI	101	rth	2	units:
A	Α	1	1	\$	A	A	A		
A	A	1	1	\$	A	A			
в	в	D	D	\$	В	в			
в	в	D	D	\$	в	В	D		
С	С			\$	С	С			
С	С			\$	С	С			
2	2	S	S	\$					
2	2	S	S	\$					
#2	2.	Mo	ove	9 5	5 I	101	rth	2	units:
A	A	1	1	\$	A	A	A		
A	A	1	1	\$	A	A			
в	в	D	D	\$	в	в			
В	в	D	D	\$	В	В	D		
С	С	S	S	\$	С	С			
С	С	S	S	\$	С	С			
2	2			\$					
2	2			\$					

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#2. Move S: #4. Move C:	#6. Move D:	#8. Move 2:
AA11\$AAA AA11\$AAA	AA11\$AAA	AA11\$AAA
AA11\$AA AA11\$AA	AA11\$AA	A A 1 1 \$ A A
BBDD\$BB BBDD\$BB	DD \$	DDSS\$
BBDD\$BBD BBDD\$BBD	DD SD	DDSSSD
ccssscc sss	BBSSSBB	BB22SBB
CCSSSCC SSS	BBSSSBB	BB22SBB
22 \$ CC22\$CC	CC22SCC	CC SCC
	C C 2 2 S C C	CC SCC
#10 Move B: #12 Move B:	#14 Move S:	#16 Move D:
	11555	1 1 5 5 5
	11555	1 1 5 5 5
		A A 2 2 9 A A A
DDSSSD AASSSAA	AA ŞAA	AAZZŞAA
	D D 2 2 5	D D S
	D D 2 2 \$ D	DDŞ D
B B C C S B B C C B B C C S B B C C	ввссуввсс	BBCCSBBCC
	BBCCSBBCC	BBCCSBBCC
#18. Move 2: #20. Move 1:	#22. Move A:	#24. Move S:
11555 115	22115	22115
	2 2 1 1 \$	2 2 1 1 \$
22 \$ 2255\$	AASSŞAAA	AA ŞAAA
22 \$ 2255\$	AASSŞAA	AA ŞAA
AADDŞAAA AADDŞAAA	D D Ş	DDSS\$
AADD\$AAD AADD\$AAD	DD\$ D	D D S S \$ D
BBCC\$BBCCBBCC\$BBCC	BBCC\$BBCC	ввсс\$ввсс
BBCC\$BBCCBBCC\$BBCC	BBCC\$BBCC	BBCC\$BBCC
#26. Move 2: #28. Move D:	#30. Move 1:	#32. Move S:
22\$ AA22\$AAA	AA22\$AAA	AA22\$AAA
22\$ AA22\$AA	AA22\$AA	AA22\$AA
AA11\$AAA DD11\$	DD \$	SSDD\$
AA11SAA DD11SD	DD SD	SSDDS D
DDSSS SSS	S S 1 1 S	115
DDSSSD SSS	5 5 1 1 5	1 1 5
BBCCSBBCCBBCCSBBCC	BBCCSBBCC	BBCCSBBCC
BBCCSBBCCBBCCSBBCC	BBCCSBBCC	BBCCSBBCC
#34. Move C: #36. Move D:	#38 Move B:	#40 Move 1:
AA22SAAA AA22SAAA	AA22SAAA	AA22SAAA
	A A 2 2 S A A	A A 2 2 S A A
senne ee e	BBGGGBB	RRCCCPP
	5555555	
	C C I I S C C	1 1 3

Starting with Step 2, here is every second step of a 40 moves solution:

Here is every second step of a 27 moves solution:

#0:	#2. Move C:	#4. Move S:
AA11SAAA	AA11SAAA	AA11SAAA
AAIISAA	AA11SAA	AA11SAA
BBSSSBB	BBSSSBB	SS \$
BBSSSBB	BBSSSBB	SS S
CCDDSCC	DDS	BBDDSBB
CCDDSCCD		BBDDSBBD
2 2 5	CC22SCC	CC22SCC
2 2 5	C C 2 2 \$ C C	C C 2 2 \$ C C
#6. Move 2:	#8. Move B:	#10. Move D:
AAIISAAA	AA11\$AAA	AA11\$AAA
AAIISAA	AA11SAA	AA11SAA
SSDDS	SSDDS	DD Ś
SSDDS D	SSDDS D	DD SD
BB22\$BB	225	S S 2 2 S
BB22SBB	225	S S 2 2 S
cc scc	ввссѕввсс	BBCCSBBCC
cc scc	BBCC\$BBCC	BBCC\$BBCC
#12. Move S:	#14. Move A:	#16. Move 2:
AA11SAAA	11\$	1 1 2 2 \$
AAIISAA	11\$	1 1 2 2 \$
D D 2 2 \$	AA22SAAA	AA SAAA
DD22SD	AA22SAA	AA SAA
s s s	DDSSS	DDSSS
SSS	DDSSSD	DDSSSD
BBCCSBBCC	BBCCSBBCC	BBCCSBBCC
BBCCSBBCC	BBCC\$BBCC	BBCC\$BBCC
#18. Move D:	#20. Move 1:	#22. Move S:
1 1 2 2 \$	22\$	2255\$
1 1 2 2 \$	22\$	2255\$
AASSSAAA	1155\$	11 \$
AASSSAA	1155\$	11 \$
DD\$	AADD\$AAA	AADD\$AAA
DDS D	AADDŜAAD	AADD\$AAD
ввссѕввсс	ввсс\$ввсс	BBCC\$BBCC
ввсс\$ввсс	ввсс\$ввсс	ввсс\$ввсс
#24. Move A:	#26. Move C:	#27. Move D:
2255\$	2255\$	2255\$
2255\$	2255\$	2255\$
AA11\$AAA	AA11\$AAA	AA11\$AAA
AA11\$AA	AA11\$AA	AA11\$AA
DD\$	B B D D \$ B B	вв \$вв
DD\$ D	BBDD\$BBD	вв \$вв
BBCC\$BBCC	cc \$cc	CCDD\$CC
ввсс\$ввсс	сс \$сс	CCDD\$CCD

Here is a 12 moves solution:

	#1 Mana D	#2 Marra 6.	
#0:	#1. Move D:	#2. Move C:	
11555	11555	11555	
11555	11555	11555	
AA22ŞAAA	AA22\$AAA	AA22\$AAA	
AA22\$AA	A A 2 2 \$ A A	AA22\$AA	
вв \$вв	B B D D \$ B B	8 8 D D \$ 8 B	
вв \$вв	BBDD\$BBD	BBDD\$BBD	
CCDD\$CC	cc scc	cc\$ cc	
CCDD\$CCD	cc \$cc	cc\$ cc	
#3. Move B:	#4. Move A:	#5. Move 1:	
11555	11555	SSS	
11555	11555	SSS	
A A 2 2 S A A A	225	1 1 2 2 5	
A A 2 2 S A A	225	1 1 2 2 5	
	AADDOAAA		
	AADDŞAAD	AADDŞAAD	
ввссуввсс	ввссуввсс	ввссуввсс	
ввссѕввсс	ввссуввсс	ввссѕввсс	
#6. Move S:	#7. Move 2:	#8. Move 1:	
SS Ş	S S 2 2 \$	S S 2 2 \$	
SS \$	SS22\$	SS22\$	
1 1 2 2 \$	11 \$	1 1 \$	
1 1 2 2 \$	11 \$	11\$	
AADDŞAAA	AADD\$AAA	AADD\$AAA	
AADDŞAAD	AADDŞAAD	AADDŞAAD	
BBCC\$BBCC	ввсс\$ввсс	ввсс\$ввсс	
ввсс\$ввсс	ввсс\$ввсс	ввсс\$ввсс	
#9. Move A:	#10. Move B:	#11. Move C:	
S S 2 2 S	S S 2 2 S	S S 2 2 S	
55225	S S 2 2 S	S S 2 2 S	
AAIISAAA		AA11\$AAA	
A A 1 1 S A A		ΔΔΙΙŚΔΔ	
DDS	BBDDSBB	BBDDŚBB	
B B C C S B B C C			
ввссуввсс			
#12. Move D:			
5 5 2 2 5			
S S Z Z Ş			
AAIIŞAAA			
AA11ŞAA			
вв \$вв			
вв \$вв			
- Contract of the second			
CCDD\$CC			

Here is every second step of a 25 moves solution:

#0: S S 1 1 \$ S S 1 1 \$ A A 2 2 \$ A A A A A 2 2 \$ A A A B B \$ B B B B \$ B B	#2. Move C: S S 1 1 \$ S S 1 1 \$ A A 2 2 \$ A A A A A 2 2 \$ A A A B B D D \$ B B B B D D \$ B B D	#4. Move A: S S 1 1 \$ S S 1 1 \$ 2 2 \$ 2 2 \$ A A D D \$ A A A A A D D \$ A A D
CCDD\$CCD		BBCC\$BBCC
#6. Move 1: 1 1 \$ 1 1 \$ S S 2 2 \$ S S 2 2 \$	#8. Move S: 1 1 2 2 \$ 1 1 2 2 \$ 5 S \$ 5 S \$	#10. Move D: 1 1 2 2 \$ 1 1 2 2 \$ A A S S \$ A A A A A S S \$ A A
A A D D \$ A A A A A D D \$ A A D B B C C \$ B B C C B B C C \$ B B C C	A A D D \$ A A A A A D D \$ A A D B B C C \$ B B C C B B C C \$ B B C C	DD \$ DD \$D BBCC\$BBCC BBCC\$BBCC
#12. Move 2: 1 1 \$ 1 1 \$ A A 2 2 \$ A A A A A 2 2 \$ A A D D S S \$ D D S S \$ D B B C C \$ B B C C B B C C \$ B B C C	#14. Move A: A A 1 1 \$ A A A A A 1 1 \$ A A 2 2 \$ 2 2 \$ D D S S \$ D D S S \$ D D S S \$ D D S S \$ D D S C C \$ B B C C B B C C \$ B B C C	#16. Move B: A A 1 1 \$ A A A A A 1 1 \$ A A A D D 2 2 \$ D D 2 2 \$ D D 2 2 \$ B B S S \$ B B B B S S \$ B B C C \$ C C C C \$ C C
#18. Move S: A A 1 1 \$ A A A A A 1 1 \$ A A D D 2 2 \$ D D 2 2 \$ D D 2 2 \$ D B B \$ B B B B \$ B B C C S S \$ C C C C S S \$ C C	#20. Move D: A A 1 1 \$ A A A A A 1 1 \$ A A D D \$ D D \$ D D \$ B B 2 2 \$ B B B B 2 2 \$ B B C C S S \$ C C C C S S \$ C C	#22. Move C: A A 1 1 \$ A A A A A 1 1 \$ A A B B D D \$ B B B B D D \$ B B C C 2 2 \$ C C C C 2 2 \$ C C S S \$ S \$
#24. Move 2: A A 1 1 \$ A A A A A 1 1 \$ A A B B D D \$ B B B B D D \$ B B D C C \$ C C C C \$ C C S S 2 2 \$ S S 2 2 \$	#25. Move D: A A 1 1 \$ A A A A A 1 1 \$ A A B B \$ B B B B \$ B B C C D D \$ C C C C D D \$ C C D S S 2 2 \$ S S 2 2 \$	

Here is every second step of a 38 moves solution:

#0:	#2. Move 2:	#4. Move C:	#6. Move D:
AAIISAAA	AAIISAAA	AA11SAAA	AAIISAAA
AAIISAA	AAIISAA	AA11SAA	AAIIŚAA
BB SBB	BBDDSBB	BBDDSBB	DD S
BB SBB	BBDDSBBD	BBDDSBBD	
CCDDSCC	6 6 2 2 8 6 6	226	
0000000	0022300	2 2 3	B B 2 2 3 B B
CCDDSCCD	6622566	225	8822588
S S 2 2 \$	SS Ş	CCSSŞCC	CCSSŞCC
S S 2 2 \$	SS Ş	CCSSŞCC	CCSSŞCC
#8. Move S:	#10. Move B:	#12. Move A:	#14. Move 2:
AA11\$AAA	AA11ŞAAA	11\$	1 1 2 2 \$
AA11\$AA	AA11\$AA	11\$	1 1 2 2 \$
DD22\$	DD22\$	AA22\$AAA	AA ŞAAA
D D 2 2 \$ D	D D 2 2 \$ D	AA22\$AA	AA \$AA
BBSSSBB	SSS	DDSSS	DDSSS
BBSSSBB	S S \$	DDSS\$D	DDSS\$D
cc scc	BBCC\$BBCC	BBCC\$BBCC	BBCC\$BBCC
cc şcc	ввсс\$ввсс	ввсс\$ввсс	ввсс\$ввсс
#16. Move D:	#18. Move 1:	#20. Move S:	#22. Move A:
11225	225	22555	22555
11225	225	22555	22555
	11555	1 1 8	
AAGGGAA	1 1 6 6 6	1 1 6	
AASSŞAA	1 1 5 5 9		AAIIŞAA
	AADDSAAA	AADDSAAA	
	AADDŞAAD	AADDŞAAD	
BBCCSBBCC	BBCCSBBCC	BBCCSBBCC	BBCCSBBCC
ввссуввсс	ввссуввсс	ввссуввсс	ввссуввсс
#24. Move 1:	#26. Move 2:	#28. Move D:	#30. Move C:
2255\$	22\$	AA22ŞAAA	A A 2 2 \$ A A A
2255\$	22\$	AA22\$AA	AA22\$AA
AA ŞAAA	AASSŞAAA	DDSS\$	DDSS\$
AA ŞAA	AASS\$AA	DDSS\$D	DDSS\$D
DD11\$	DD11\$	11\$	B B 1 1 \$ B B
D D 1 1 \$ D	D D 1 1 \$ D	11\$	B B 1 1 \$ B B
BBCC\$BBCC	BBCCSBBCC	BBCC\$BBCC	cc scc
BBCCSBBCC	BBCC\$BBCC	BBCC\$BBCC	cc scc
#32. Move S:	#34. Move B:	#36. Move 1:	#38. Move D:
AA22SAAA	AA22SAAA	AA22SAAA	AA22SAAA
AAZZSAA	AAZZSAA	AAZZSAA	AA22SAA
DD S	BBDDSBB	BBDDSBB	BB SBB
	BBDD¢BBD	BBDDSBBD	
PRECEPR		C C C C C C C C C C C C C C C C C C C	CCDDSCC
	889		CCDDSCC
8 8 8 8 8 8 8 8			CCDDSCCD
		ccssscc	1 1 0 0 0
сс11\$сс	c c 1 1 \$ c c	CCSS\$CC 11 \$	1155\$