Step 1 for 8 Person Relay

Start with the ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = I WANT TO HOLD YOUR HAND

1. Change I to P
   PWANTTOHOLDYOURHAND

2. Take any double letters and move them back one letter in the alphabet
   PWANSSOHOLDYOURHAND

3. Flip the order of any bigram that is also an article
   PWNASSOHOLDYOURHNAD

4. Replace the palindromic trigram with IUM
   PWNASSIUMLDYOURHNAD

5. Find two letters that are consecutive in the alphabet and adjacent in the string. Convert the second letter to B.
   PWNASSIUMBDYOURHNAD

6. Yo, California! Replace YO with CA.
   PWNASSIUMBDCAURHNAD

7. Find four letters that are consecutive in the alphabet and adjacent in the string. Replace the second letter with I.
   PWNASSIUMBICAURHNAD

8. Go off-topic. Replace the second and third letters with OT.
   POTASSIUMBICAURHNAD

9. Are you serious? Switch consecutive R and U.
   POTASSIUMBICARUHNAD

10. Uh... have you showered lately? Switch UH with BO.
    POTASSIUMBICARBONAD

11. Go on a DaTE. Switch D with TE.
    POTASSIUMBICARBONATE

Pass back POTASSIUM BICARBONATE to step 2

Step 1 for 7 Person Relay

Start with the ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = I WANT TO HOLD YOUR HAND

1. Drop the last word.
   IWANTTOHOLDYOUR

2. Take an existing three letter palindromee and replace it with the three letter palindrome INI.
   IWANTTINILDYOUR

3. Swap the first two letters.
   WIANTTINILDYOUR

4. Take the first letter and rotate it 90 degrees counter clockwise. Draw a vertical line from the top left down to the bottom left corner. Replace the first letter with the letter this glyph most resembles.
   BIANTTINILDYOUR

5. Family matters: Take consecutive double letters and replace them with PA. Take LD and replace them with PA's wife. Take the last three letters and replace them with their male child.
   BIANPAINIMAYSON

6. Ants! Take the consecutive instance of the first two letters of ANTS and replace them with the last two letters of ANTS.
   BITSPAINIMAYSON

7. Replace Y with C.
   BITSPAINIMACSON

8. Add spaces to pass back a three letter word, a five letter word, a four letter word (a commercial product), and a three letter word in the order they appear in the string.
   BIT SPAIN IMAC SON

Pass back BIT SPAIN IMAC SON to step 3

Step 1 for 6 Person Relay

Start with the ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = I WANT TO HOLD YOUR HAND

1. Reduce to the first, fourth, and fifth words of the answer.
   IHOLDYOUR

2. Swap the second and third letter.
   IOHLDYOUR

3. One letter appears twice in the string. Take the first occurrence of this letter and replace it with a copy of the first letter in the string.
   IIHLDYOUR

4. One letter appears twice in the string. Take the first occurrence of this letter and replace it with T.
   TIHLDYOUR

5. Swap the 6th letter and the second to last letter.
   TIHLDUOYR

6. Take the last letter and replace it with the letter that appears directly to its left in a QWERTY keyboard. Do the same with the fifth letter.
   TIHLSUOYE

7. Hey, Look! McDonald's! Replace HL with MC.
   TIMCSUOYE

8. Replace the second to last letter with a copy of the fifth letter.
   TIMCSUOSE

9. Replace the fifth letter with the letter that immediately precedes it in the alphabet.
   TIMCRUOSE

10. Swap the second and seventh letters.
    TOMCRUISE

Pass back TOMCRUISE to step 4

Step 1 for 5 Person Relay

Start with the ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = I WANT TO HOLD YOUR HAND

1. Reduce to the first, fourth, and fifth words of the answer.
   IHOLDYOUR

2. Move the second and third letters to the end.
   ILDYOURHO

3. Swap the first and second letters.
   LIDYOURHO

4. Say what, Santa? Take a syllable Santa is famous for saying and replace it with SE.
   LIDYOURSE

5. Replace the first letter with the letter that immediately follows it in the alphabet.
   MIDYOURSE

6. Replace the fourth letter with the letter four in front of it in the alphabet. (Loop around from Z to A if necessary.)
   MIDCOURSE

7. Replace the third letter with a T.
   MITCOURSE

8. Add a space after the third letter and pass back a two word phrase. *MIT COURSE*

Pass back MIT COURSE to step 5

Step 1 for 4 Person Relay

Start with the ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = I WANT TO HOLD YOUR HAND

1. Reduce to the first, third, and fifth words of the answer.
   ITOYOUR

2. Swap the third and fourth letters.
   ITYOOUR

3. Replace any double letters with the letter three before it in the alphabet (still doubled).
   ITYLLUR

4. Replace the two letters before any double letters with a doubled second letter of the alphabet.
   IBBLLUR

5. Swap the second and fourth letters.
   ILBBLUR

6. Replace the last letter with the letter that in the alphabet comes immediately after the current string's only (consecutive) doubled letter.
   ILBBLUC

7. Replace the first letter with the first letter in the name of the university you are sitting in.
   MLBBLUC

8. Swap the fourth and last letters.
   MLBCLUB

9. Add a space after the third letter and pass back a three letter acronym and a four letter word.
   MLB CLUB

Pass back MLB CLUB to step 6

Step 1 for 3 Person Relay

Start with the ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = I WANT TO HOLD YOUR HAND

1. Reduce to the third, and sixth words of the answer.
   TOHAND

2. Swap the first and last letter.
   DOHANT

3. Swap the second and fourth letter.
   DAHONT

4. Santa's in Rhode Island! Swap a syllable Santa is famous for saying with the postal abbreviation for Rhode Island.
   DARINT

5. Replace the last letter with the more common name for the musical note A♭♭.
   DARING

6. Replace the first letter with the letter immediately preceding it in the alphabet.
   CARING

Pass back CARING to step 7

Step 1 for 2 Person Relay

Start with the ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = I WANT TO HOLD YOUR HAND

1. Reduce to the first, fifth, and sixth words of the answer.
   IYOURHAND

2. Move the second letter forward four positions in the string.
   IOURHYAND

3. Retweet! Change R to T.
   IOUTHYAND

4. From Fargo to Providence! Replace the postal abbreviation for the state Fargo is located in with the postal abbreviation for the state Providence is located in.
   IOUTHYARI

5. Replace Y with the English spelling of the Greek letter associated with the ratio of the circumference of a circle and its diameter.
   IOUTHPIARI

6. Eye see you! Delete any Is.
   OUTHPAR

7. Inside Saskatoon. Put the entire string inside the postal abbreviation for Saskatchewan.
   SOUTHPARK

Pass back SOUTH PARK to step 8

7

Step 2

Use the ANSWER PASSED TO YOU to fill in this word search.
ANSWER PASSED TO YOU = POTASSIUM BICARBONATE

4	10	7	2	5
14	13	9	15	16
6	1	18	11	17
19	8	12	3	20

Place the first letter of the answer in the box labeled 1, the second letter in the box labeled 2, etc to get the following grid:

A	B	I	O	S
R	A	M	B	O
S	P	A	I	N
T	U	C	T	E

Pass four words found in the completed word search back to the person behind you in order:

1. Something you might find in a horse's mouth (3) *BIT*

2. A country (5) *SPAIN*

3. An Apple product (4) *IMAC*

4. A family member (3) *SON*

Pass back BIT SPAIN IMAC SON

8

Step 3

Replace the question marks with ANSWER PASSED TO YOU.
ANSWER PASSED TO YOU = BIT SPAIN IMAC SON
Solve this as a standard drop quote.

D		E		I		N				A	N		A	I
M	L	S	O	R	O	G	U	N	M	P	O	T	C	R
B	*I*	*T*	*S*	*P*	*A*	*I*	*N*	*I*	*M*	*A*	*C*	*S*	*O*	*N*
M	*I*	*S*	*S*	*I*	*O*	*N*	■	*I*	*M*	*P*	*O*	*S*	*S*	*I*
B	*L*	*E*	■	*R*	*A*	*I*	*N*	■	*M*	*A*	*N*	■	*A*	*N*
D	■	*T*	*O*	*P*	■	*G*	*U*	*N*	■	*A*	*C*	*T*	*O*	*R*

The answer is TOM CRUISE, who starred in all three of Mission Impossible, Rain Man, and Top Gun.

Step 4

658347192 = ANSWER PASSED TO YOU

ANSWER PASSED TO YOU = TOM CRUISE = 658 347192

Create a 3×3 Magic Square with the digits 1-9 such that each row, column, and diagonal sums to the same number.

8	1	6
3	5	7
4	9	2

Converting numbers to letters using the matching given above:

M	I	T
C	O	U
R	S	E

Reading across gives you the answer MIT COURSE.

Step 5

Convert to ANSWER PASSED TO YOU.
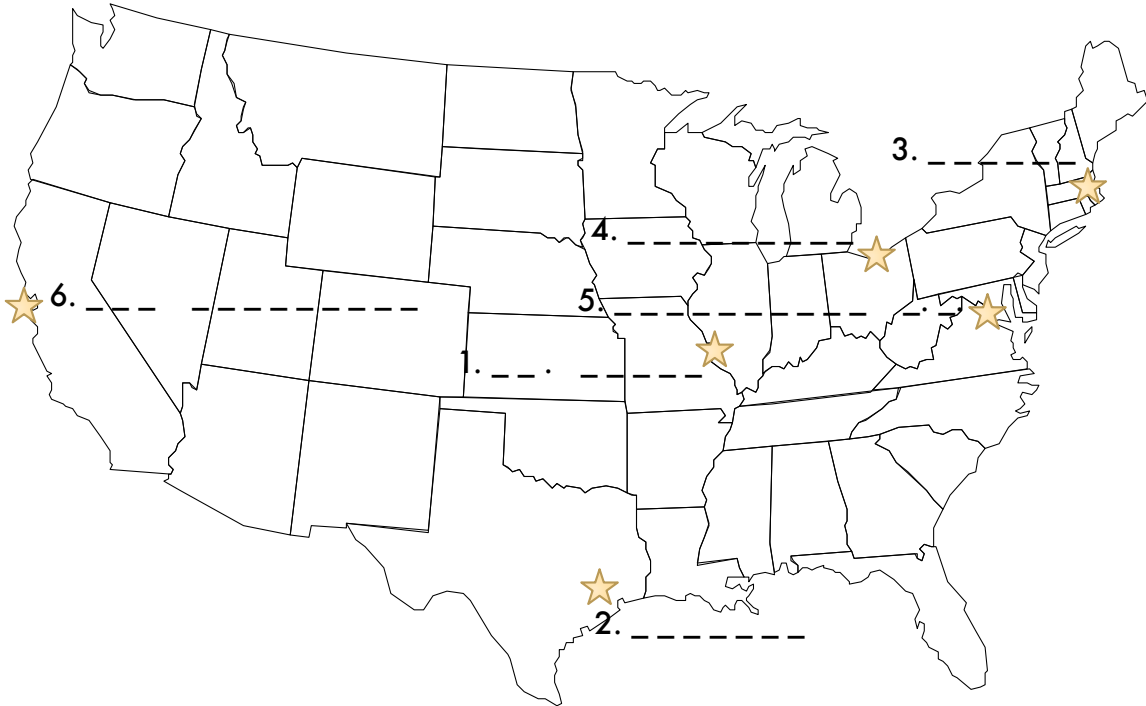*The ANSWER PASSED TO YOU is MIT COURSE.*

$$\sqrt{5-1} \quad = 2 \ \text{Mechanical Engineering}$$

$$4 \times (9-3) \quad = 24 \ \text{Linguistics and Philosophy}$$

$$\sqrt{2 * 5^2 - 1} \quad = 7 \ \text{Biology}$$

$$2^3 - 3 \quad = 5 \ \text{Chemistry}$$

$$\frac{42 \times 4}{7} \quad = 24 \ \text{Linguistics and Philosophy}$$

$$\frac{12^2 - 23}{11} \quad = 11 \ \text{Urban Studies and Planning}$$

$$3^2 \quad = 9 \ \text{Brain and Cognitive Sciences}$$

Reading the first letter of the MIT Course associated with each number gives you MLB CLUB.

Step 6

Use the ANSWER PASSED TO YOU from each city.

The ANSWER PASSED TO YOU is MLB CLUB. So you will identify the Major League Baseball team associated with each city.

1. *St. Louis Cardinals*

2. *Houston Astros*

3. *Boston Red Sox*

4. *Cleveland Indians*

5. *Washington (DC) Nationals*

6. *San Francisco Giants*

Reading the first letter of the MLB CLUB for each city gives you CARING.

Step 7

Take the ANSWER PASSED TO YOU and black out the first appearance of each letter, reading from top to bottom, left to right. If the letter appears twice in the ANSWER PASSED BACK TO YOU, black out the first two occurrences of that letter.

The ANSWER PASSED TO YOU is CARING. See the grid with blacked out squares (in blue) below

Solve the grid as a Light Up puzzle by placing lightbulbs (💡) satisfying the following constraints:

- Every non-blacked out square must be lit.

- A square is lit if it is in the same row or column as a lightbulb (💡) with no blacked out squares directly between them.

- A number in a square indicates how many bulbs share an edge (not diagonally) with that square.

- No bulb may light another bulb.

T	C	E	M	L	💡S	1
💡O	S	P	Y	L	1	A
C	💡U	2	💡T	R	V	I
H	2	N	I	💡H	L	R
W	💡P	U	0	E	F	G
M	Y	💡A	S	2	💡R	M
U	0	A	D	💡K	W	Y

Reading the squares where the lightbulbs are placed from top to bottom, left to right, gives the answer to pass back SOUTH PARK.

Step 8

123456789 = ANSWER PASSED BACK TO YOU
ANSWER PASSED BACK TO YOU is SOUTH PARK.

7	①	4	3	5	8	6	2	9
8	9	3	6	4	2	1	7	⑤
2	6	5	⑦	9	1	4	3	8
5	2	9	4	8	6	3	1	7
1	⑧	6	9	3	7	5	4	2
4	3	7	1	2	5	8	9	6
9	5	8	2	1	3	7	6	4
3	7	2	5	6	4	9	8	1
⑥	4	1	8	7	9	2	5	3

*The circled numbers from top to bottom are 15786. Converting to the letters in SOUTHPARK gives the final answer to the puzzle **SHARP**. Note: for relay runs of 5 persons or fewer, teams were given an easier sudoku to solve with different givens, but the same solution as the above sudoku.*