



INTRO: FIRST IMPRESSIONS

Welcome, Class of 2023, to the annual frosh **aquarium puzzlehunt!** Here's how it works:

1. Form a team (we recommend **4 to 7 people**). Each team needs **one phone** that can send texts. **Always use the same phone!**
2. Then, **text your team name** to Mission Control at **(254)AQUAPUZ**, or **(254) 278-2789**.
3. Now, **go hunt!** There are **8 puzzles** hidden in the aquarium; you can do them in any order. Each one has an answer that is an **English word or short phrase**.
4. **To submit an answer**, text it in using the format: [puzzle #] [answer]. For example, to submit the answer "fish" for puzzle 6, you would text **6 fish**. There's no penalty for wrong answers, but please don't spam our server!
5. **Mission Control** at the front desk is available for hints. Some general tips:
 - Read the title and flavortext carefully. Stay organized, and look for patterns!
 - If you have a phrase and a number, try "indexing": taking the letter in the phrase at the position indicated by the number. (Ignore spaces!)

The 3 teams that finish the puzzlehunt fastest will win **fabulous prizes**. Best of luck, and have fun!

—Mission Control

Message from L. Rafael Reif <office-of-the-president@mit.edu>

Sent Aug 30, 2019, 7:00 PM EDT

To the members of the MIT community:

*Today, we are proud to announce a long-term partnership between MIT and a new **cultural scholarship program** with the goal of enriching our values of workmanship, diversity, and creativity while fostering deep connections with other major institutions of learning.*

*For the 2019-20 fall semester, **eight students** have applied through this program and been selected to study at the Institute. Having met with these students myself, I can say without hesitation that they are full of potential and are brimming with enthusiasm to join the MIT community, despite their somewhat ... unconventional backgrounds.*

*As part of the application process, each student was asked to create an interesting **puzzle** through which they portrayed an aspect of their personality or culture. The admissions committee was very impressed with the results, and so I am pleased to be able to share these puzzles with you. I hope that you enjoy solving these puzzles and, in doing so, getting to know your new classmates.*

*Sincerely,
L. Rafael Reif*

(This page is not a puzzle.)



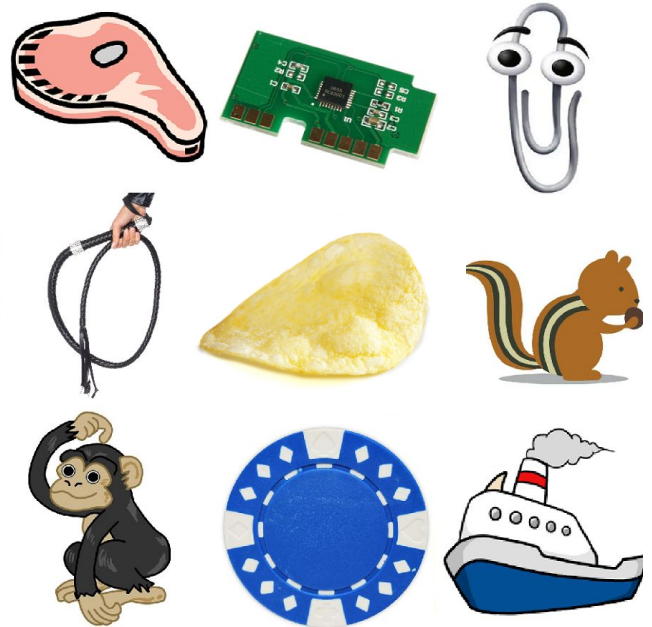
1: I'M NOT A ROBOT

Applicant's comment: *I know cybersecurity is important, but these new captchas are tricky!*

Select all images of a **bow**.



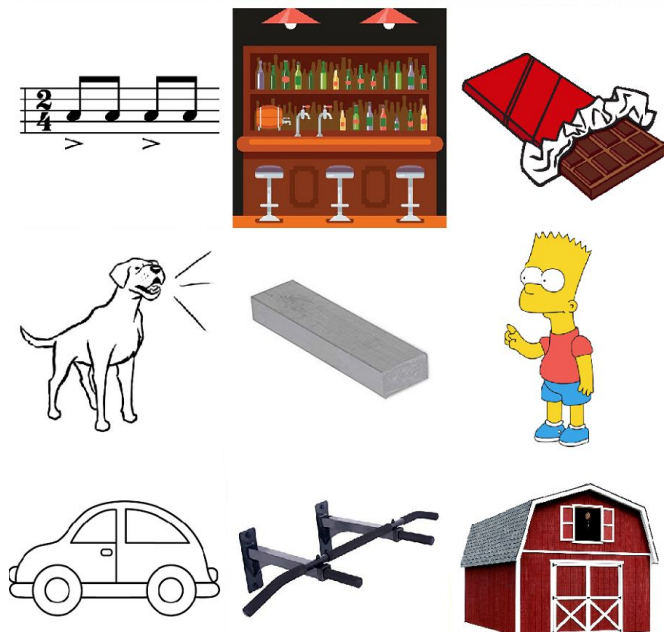
Select all images of a **chip**.



Select all images of a **check**.



Select all images of a **bar**.





2: THROWING SHADE

Applicant's comment: *I consider myself a pretty logical person.*

This is a type of logic puzzle known as **Hitori**.

Rules: in the grid below, shade some of the squares such that afterwards,

1. No row or column contains the same letter (in unshaded squares) more than once;
2. No two shaded squares are adjacent (but they *can* be diagonal to each other);
3. The *unshaded* squares are all connected to each other, horizontally or vertically.

Solving tips:

- To get started, you might try looking at certain pairs of adjacent squares with the same letter.
- It might be helpful to mark unshaded squares in some way (e.g. by circling them).
- Remember to consider and apply all three rules!

Good luck, and enjoy!

PS: Don't shade the squares *too* darkly. You'll need to be able to see the letters underneath....

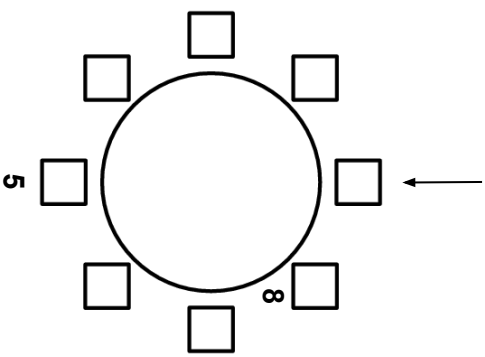
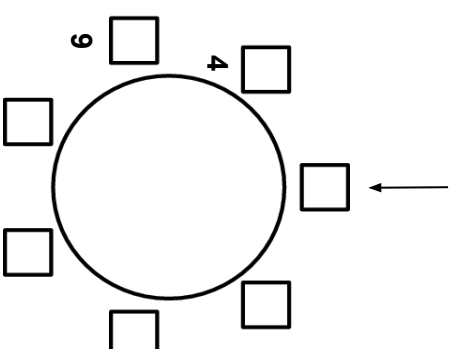
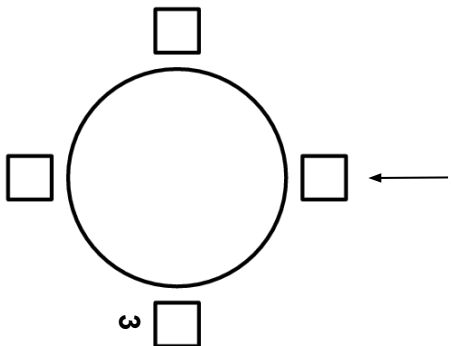
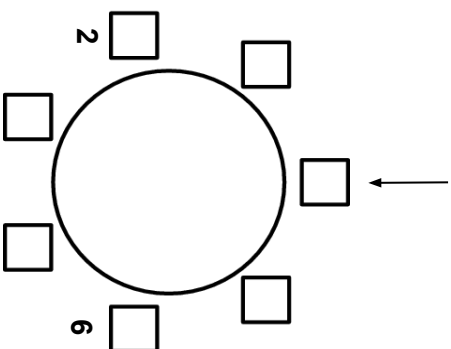
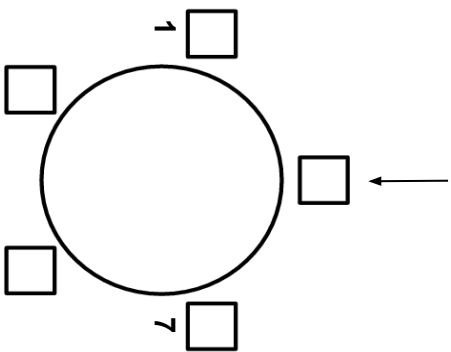
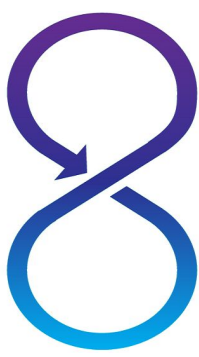
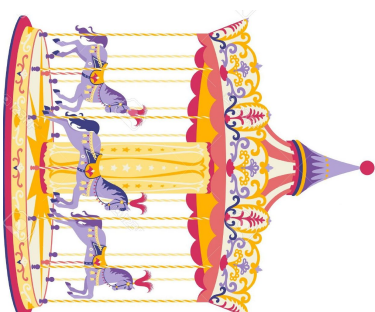
M	T	T	E	P	U	A	M
T	S	R	P	P	A	E	M
R	T	A	E	A	S	M	R
R	T	M	A	U	P	U	E
E	R	R	T	U	E	S	M
S	E	E	A	R	M	S	T
A	M	S	R	U	T	E	U
R	A	E	M	S	R	T	R



3: CIRCULAR REASONING

Applicant's comment: *Back home, everyone I knew loved that one song by Johnny Cash, "Ring of Fire."*

(Fill in clockwise, starting at top.)





4: POT OF GOLD

Applicant's comment: *I used to have a penpal! His name was Roy G. Biv.
He still sends me various letters sometimes.*

Some random guy is sprouting out some possibly true facts about oranges (AKA 15-18-1-14-7-5-19)!

There are at least 20 varieties of oranges in the world.
As they say, 1 orange a day keeps the doctor away.

The average orange tree is 11 feet tall.

About 5 people have died from an orange overdose.

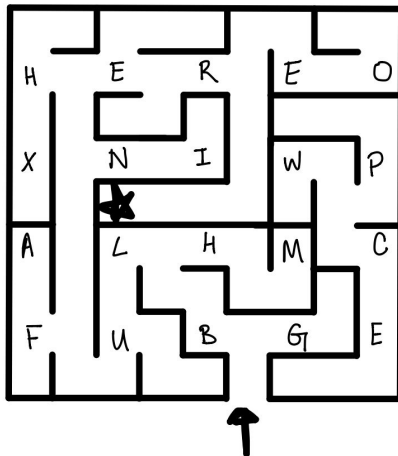
Only about 20% of oranges are sold as a whole fruit.

The value of the orange crop a few years ago was estimated at 8 million dollars.

At least 5 people have consumed an orange.

The average person eats 12 pounds of oranges per year.

You may have gotten distracted looking at the clear, cloudless sky and fell into the ocean. Try to find your way to shore.



Temporary break to enjoy trivia night! Have some fun:

A way which is opposite of out?

A way to burrow in the ground?

A symbol for the eighth element?

Oof, this sugar-free diet is really getting to you.
Some fruit would be quite nice right now....

lemon	turnips	starfruit
celery	banana	cauliflower
carrots	pineapple	spinach

We stopped by Baskin Robbins but they seem to have some typing mishaps...

Neavolitan
Rasiberry Sorbet
Oistachio
American Lie
Mint Chie
Butter Tecan

Here are the only drinks this store offers:

Matcha
Jasmine Green
Honey Lemon Green
Peach Green

What are you drinking?

Tips for Surviving College

Keep pressing on! Even when you feel you're not *reddy*, keep going.

This is the start of the next four years of your life. You can't *redo* them.

Rediscover your old passions when things seem to be going poorly for you.

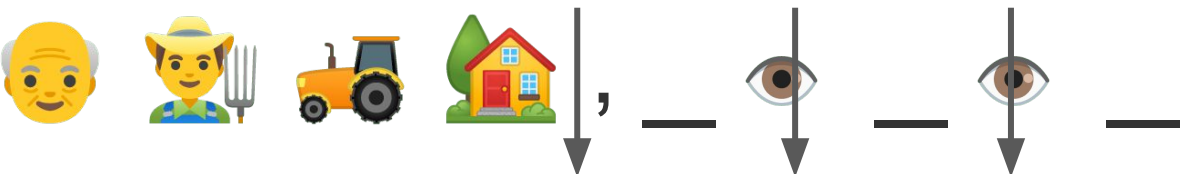
Respect everyone around you. *Redefine* your view of success; asking for help is okay!



5: THE COW JUMPED OVER THE MOON

Applicant's comment: *I still love the old songs I used to sing when I was a kid.*

1.    
2.    
3.   
4.    
5.        
- 



Answer:

- 1 2 3 4 5



6: HOW MANY?

Applicant's comment: *For me, a great night isn't complicated: getting dinner at Five Guys, and then going home to watch 101 Dalmatians with friends.*

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

i n t e r r o g a t i v e s e n t e n c e (8)

y o u n g o i n k i n g a n i m a l (6+3)

i r a t e m a l e p e r s o n (5+3)

p r o f e s s i o n a l f l i e r o f a i r p l a n e s (5)

p o n d e r o r a s e n s e o f a w e (6)

c l o t h s y m b o l o f a n a t i o n (4)

i n s t r u c t i o n o r b e a r i n g (8)

c e n t a u r o r c a v a l r y m e m b e r (8)

u n g o d l y a c t w h i c h i s f a t a l (6+3)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28

Applicant's comment: *I'm feeling pretty cheesy about college. No, sorry, I meant "cheery."*

1. Greek bird-person wind spirit (5)



2. Clothing size below LRG (3)

3. *Toy Story* main character (5)



4. (Had) cut out with a scalpel (7)

5. Body part or kind of tropical tree (4)



6. Roll of grass (3)

7. Belonging to the same family (7)





8: OF COURSE!

Applicant's comment: *I used to be a major quiz bowl player.*

This term describes the “height” or amount of energy contained in a wave.

This is the central banking system which controls American monetary policy.

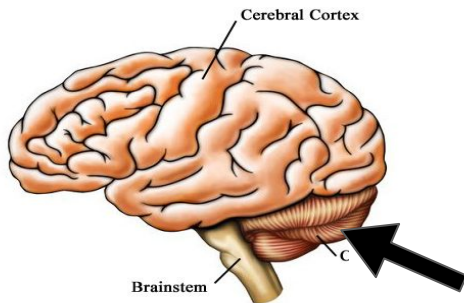
This element exists in a diatomic form as well as a triatomic form; the latter is called ozone.

This pigment gives plants their green color.

This is the value of twenty to the ninth power.

This is the natural process that includes fixation, ammonification, nitrification, and denitrification.

This part of the brain is shown below.



(A)
SIDE VIEW OF HUMAN BRAIN

MIT Course List

- 1 Civil and Environmental Engineering
- 2 Mechanical Engineering
- 3 Materials Science and Engineering
- 4 Architecture
- 5 Chemistry
- 6 Electrical Engineering and Computer Science
- 7 Biology
- 8 Physics
- 9 Brain and Cognitive Sciences
- 10 Chemical Engineering
- 11 Urban Studies and Planning
- 12 Earth, Atmospheric, and Planetary Sciences
- 14 Economics
- 15 Management
- 16 Aeronautics and Astronautics
- 17 Political Science
- 18 Mathematics
- 20 Biological Engineering
- 21 Humanities
- 22 Nuclear Science and Engineering
- 24 Linguistics and Philosophy

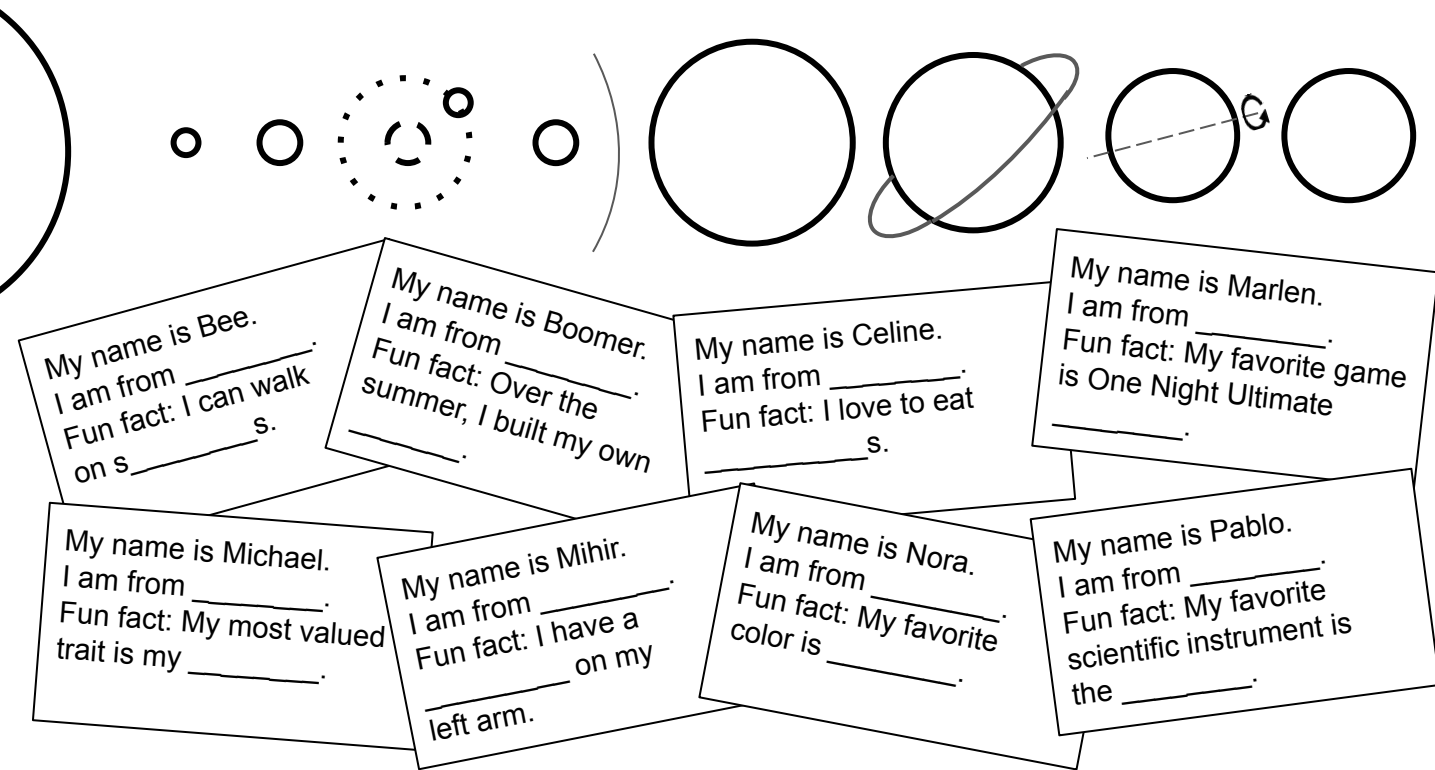
In some programming languages, the prefix ‘0x’ indicates a number in base 16, also known as this.



META: THE BANQUET

The eight students arrive at orientation. Over the next few days, they quickly find each other and become friends. However, there's a gripping sense of dismay when they discover that something, or someone, seems to be missing....

During convocation, the students are invited up to represent the organization that sent them here: the National Academic Scholarship Association. They decide to perform a skit at a blackboard to introduce themselves and express their frustration. **Why are the students upset?**



The students line up from left to right in order by where they're from. Then:

1. The first student writes their name on the board.
2. The second student switches the second and fourth letters on the board.
3. The third student writes their name backwards on the left.
4. The fourth student writes the first two letters of their name on the left, then erases the third, fourth, and fifth letters on the board.
5. The fifth student writes the two letters immediately after the last letter of their name in the alphabet after the I on the board.
6. The sixth student swaps the third and fourth letters on the board, then writes the letter immediately after the second letter of their name in the alphabet to the right of those letters.
7. The seventh student writes the first letter of their name on the left, then erases the top half of that letter. Now it's a different letter! Then they replace the first A with an O.
8. The eighth student writes their name on the left and then erases the third letter. Finally, they take the third-to-last and second-to-last letters and shift them forward by nineteen positions in the alphabet.