

**Read each statement and determine if it is true or false. If it is true, write “T” in the blank. If it is false, write “F” in the blank. (1pt each)**

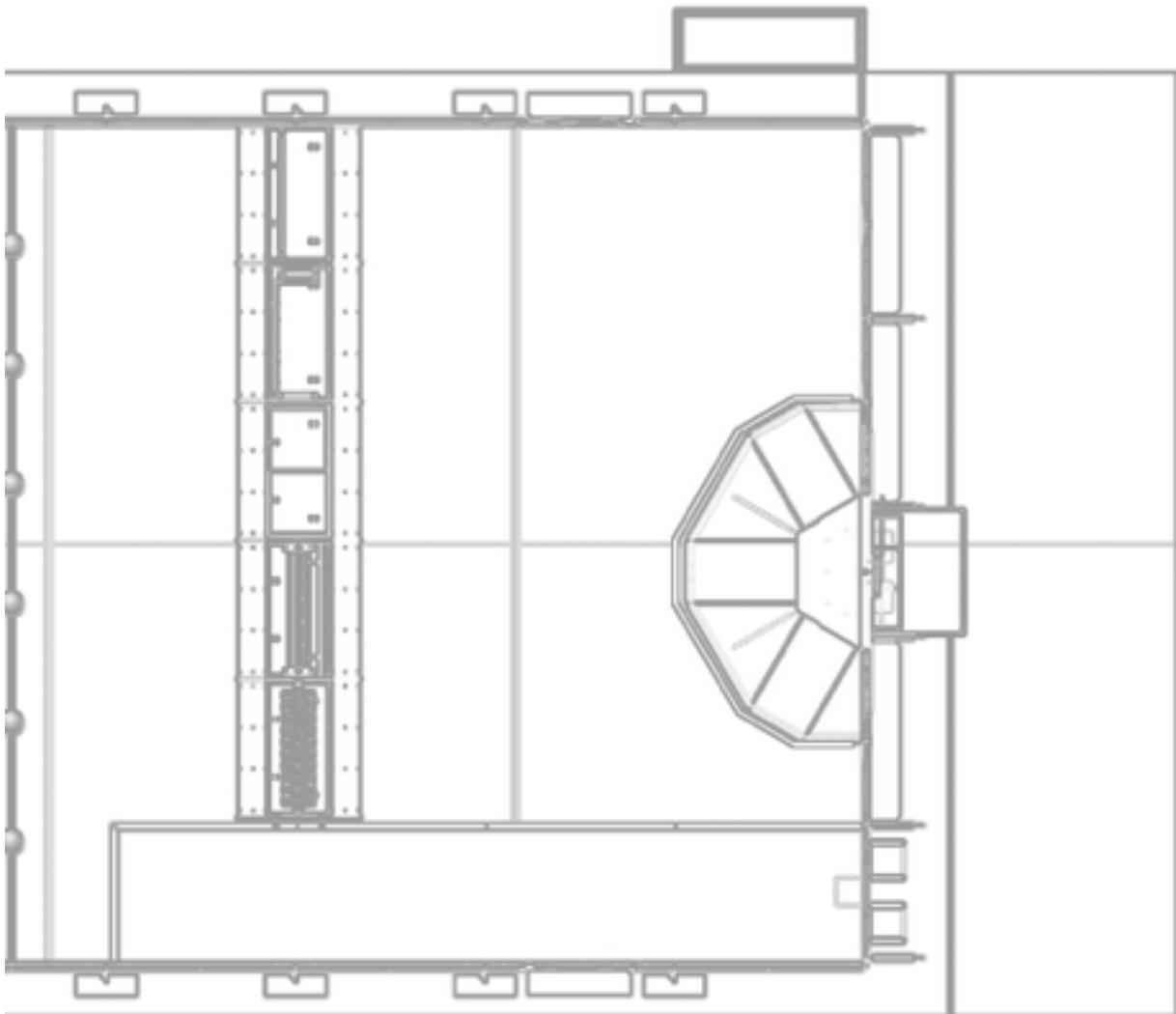
1. \_\_\_\_\_ DRIVE TEAMS may pre-load one (1) BOULDER in or on their ROBOT such that the BOULDER is fully supported by their ROBOT.
2. \_\_\_\_\_ BOULDERS that exit the FIELD over a CASTLE WALL during a MATCH are returned to the COURTYARD at the corner of the GUARDRAIL and CASTLE by FIELD STEWARDS.
3. \_\_\_\_\_ A BREACH of the opposing ALLIANCE’S OUTER WORKS earns the ALLIANCE twenty (20) match points during Qualification MATCHES.
4. \_\_\_\_\_ If a TOWER’S STRENGTH is at zero (0), each BOULDER scored in a GOAL does not decrease the TOWER’S STRENGTH.
5. \_\_\_\_\_ DRIVE TEAMS may not extend any body part into the FIELD during the MATCH.
6. \_\_\_\_\_ ROBOTS may be re-enabled after the conclusion of the MATCH to remove BOULDERS.
7. \_\_\_\_\_ ROBOTS may not use FIELD elements, e.g. BOULDERS, to interfere with the operation of other FIELD elements, e.g. DEFENSES.
8. \_\_\_\_\_ ROBOTS must be in compliance with Section 4 (4.7 BUMPER Rules) throughout the MATCH.
9. \_\_\_\_\_ A ROBOT may not transfer BOULDERS from the NEUTRAL ZONE to the opponent’s SECRET PASSAGE.
10. \_\_\_\_\_ BOULDERS may be introduced onto the FIELD only during TELEOP and only through one of the holes in the HUMAN PLAYER STATION or over the ALLIANCE WALL prior to the last twenty (20) seconds of the MATCH.
11. \_\_\_\_\_ ROBOTS in the Filler Line must have passed Inspection.
12. \_\_\_\_\_ YELLOW CARDS are cleared at the conclusion of each Qualification MATCH.
13. \_\_\_\_\_ In the case where the ALLIANCE CAPTAIN’S ROBOT is replaced by a BACKUP TEAM, the ALLIANCE CAPTAIN is allowed in the CASTLE as a thirteenth ALLIANCE member so they can serve in an advisory role to their ALLIANCE.
14. \_\_\_\_\_ Only a single ALLIANCE representative, from a DRIVE TEAM, may interact with the DC at a time.
15. \_\_\_\_\_ The ALLIANCE CAPTAIN must report the LINEUP to the Head REFEREE, or their designee, in writing within two (2) minutes of the ARENA reset signal preceding their MATCH.

**Fill in the blanks with the appropriate missing word(s). (1pt each unless otherwise stated)**

1. \_\_\_\_\_ consist of a steel barrier, 1 in. tall and 3 in. wide that defines the border of the SECRET PASSAGE.
2. A(n) \_\_\_\_\_ is a hole at the bottom of the HUMAN PLAYER STATION wall.
3. The LED light string in the PLAYER STATIONS will pulse at 0.5 Hz when a MATCH is in its final \_\_\_\_\_ seconds.
4. Before each MATCH begins, \_\_\_\_\_ BOULDER(S) are staged evenly along the length of the MIDLINE.
5. Each DEFENSE starts the MATCH with \_\_\_\_\_ STRENGTH.
6. Once four (4) out of an ALLIANCE'S five (5) DEFENSES have been DAMAGED, the ALLIANCE'S OUTER WORKS are \_\_\_\_\_.
7. Each BOULDER scored in a GOAL decreases the TOWER'S STRENGTH by \_\_\_\_\_.
8. DRIVE TEAMS may only enter the FIELD if the PLAYER STATION LED strings are \_\_\_\_\_, unless explicitly instructed by a REFEREE or an FTA.
9. ROBOT height, as measured when it's resting normally on a flat floor, may not exceed 4 ft. 6 in. during the MATCH, except during the final \_\_\_\_\_ seconds of TELEOP where there is no height limit when a ROBOT is fully contained by the opponent's COURTYARD.
10. ROBOTS may not pin an opponent's ROBOT for more than \_\_\_\_\_ second(s). A ROBOT will be considered pinned until the ROBOTS have separated by at least \_\_\_\_\_ feet. The pinning ROBOT(s) must then wait for at least \_\_\_\_\_ second(s) before attempting to pin the same ROBOT again. **(3 pts)**
11. At any given time, only one (1) ROBOT may contact the carpet or BATTER inside their \_\_\_\_\_.
12. No more than \_\_\_\_\_ BOULDER(S) may remain in a CASTLE during TELEOP.
13. During Playoff MATCHES, each Team is permitted to have \_\_\_\_\_ additional "pit crew" members who can also help with needed ROBOT repairs/maintenance.
14. The \_\_\_\_\_ has the ultimate authority in the ARENA during the event, but may receive input from additional sources, e.g. Game Designers, FIRST personnel, FTA, and technical staff.
15. In the Playoff MATCHES, each ALLIANCE will be allotted \_\_\_\_\_ TIMEOUT(S) which may be used to pause the Playoff MATCH progression.
16. The Audience selected DEFENSE is located in the OUTER WORKS position \_\_\_\_\_ for both ALLIANCES.

**Draw and label the border of the listed zones and label the listed markings in the diagram of the field below. (1 pt each)**

- | <u>Zones</u>   | <u>Markings</u> |
|----------------|-----------------|
| COURTYARD      | MIDLINE         |
| NEUTRAL ZONE   | AUTO LINE       |
| OUTER WORKS    | STARTING LINE   |
| SECRET PASSAGE | ALIGNMENT LINE  |
| SPY BOX        |                 |
| CASTLE         |                 |



**List the DEFENSES in each category (5 pts)**

Category A	Category B	Category C	Category D	non-selectable

**Which of the following electronic components are in the PLAYER STATIONS? For each of the correct answers, write "X" in the blank. (3pts)**

- \_\_\_\_\_ Ethernet Cable
- \_\_\_\_\_ Classmate Power Adapter
- \_\_\_\_\_ Emergency Stop (E-Stop) button
- \_\_\_\_\_ Flat panel display to show scoring
- \_\_\_\_\_ Team LED to indicate robot status
- \_\_\_\_\_ Power Outlet
- \_\_\_\_\_ LED light string

**How long is AUTO? (1pt)**

\_\_\_\_\_

**How long is TELEOP? (1pt)**

\_\_\_\_\_

**Fill in the table below with the point values for the tasks in *FIRST STRONGHOLD*. (16 pts)**

Action	AUTO	TELEOP	Qual	Playoff
REACHING a DEFENSE				
CROSSING an UNDAMAGED DEFENSE				
BOULDER in Low TOWER GOAL				
BOULDER in High TOWER GOAL				
CHALLENGE (per ROBOT)				
SCALE (per ROBOT)				
BREACH				
CAPTURE				

**Which DRIVE TEAM members may operate the ROBOT? For each of the correct answers, write "X" in the blank. (2pts)**

- COACHES
- HUMAN PLAYERS
- DRIVERS
- DRIVERS from another Team
- FIELD STEWARDS

**During Qualification MATCHES do RED CARDS apply to a single Team or the entire ALLIANCE? (1pt)**

\_\_\_\_\_

**Which of the following may lead to a MATCH replay? For each of the correct answers, write "X" in the blank. (2pts)**

- A tie
- Ripped or torn BOULDERS
- Broken FIELD elements
- Power failure to a portion of the FIELD
- tripping the circuit breaker in the PLAYER STATION
- Improper activation by the FMS
- Errors by FIELD STEWARDS
- a Team STANDARD falling into the FIELD
- A piece of FIELD plastic falls into the FIELD, but does not, in the judgment of the Head REFEREE, affect the outcome of the MATCH

**Pick two of the following four questions. Answer them on a separate sheet of paper. Be thorough in your responses and give as many details as you can remember. (6pts each)**

1. When a robot is placed on the FIELD for a MATCH, where can it be placed? How should it be configured?
2. All Teams participating in the Tournament are seeded during the Qualification MATCHES. Describe how the seeding order is determined.
3. What should a DRIVE TEAM do if they need clarification on a ruling or score?
4. Describe how DEFENSES are selected for QUALIFICATION MATCHES.