

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. **T** DRIVE TEAMS may pre-load one (1) BOULDER in or on their ROBOT such that the BOULDER is fully supported by their ROBOT. **See Section 3.2**
2. **T** 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. **See Section 3.2**
3. **F** A BREACH of the opposing ALLIANCE’S OUTER WORKS earns the ALLIANCE twenty (20) match points during Qualification MATCHES. **See Section 3.1.3**
4. **F** If a TOWER’S STRENGTH is at zero (0), each BOULDER scored in a GOAL does not decrease the TOWER’S STRENGTH. **See Section 3.1.4**
5. **T** DRIVE TEAMS may not extend any body part into the FIELD during the MATCH. **See G4**
6. **F** ROBOTS may be re-enabled after the conclusion of the MATCH to remove BOULDERS. **See G10**
7. **T** ROBOTS may not use FIELD elements, e.g. BOULDERS, to interfere with the operation of other FIELD elements, e.g. DEFENSES. **See G12-1**
8. **T** ROBOTS must be in compliance with Section 4 (4.7 BUMPER Rules) throughout the MATCH. **See G19-1**
9. **T** A ROBOT may not transfer BOULDERS from the NEUTRAL ZONE to the opponent’s SECRET PASSAGE. **See G27**
10. **F** 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. **See G33**
11. **T** ROBOTS in the Filler Line must have passed Inspection. **See Section 5.2.2**
12. **F** YELLOW CARDS are cleared at the conclusion of each Qualification MATCH. **See Section 5.5.4**
13. **T** 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. **See T24**
14. **T** Only a single ALLIANCE representative, from a DRIVE TEAM, may interact with the DC at a time. **See T27**
15. **F** 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. **See T33**

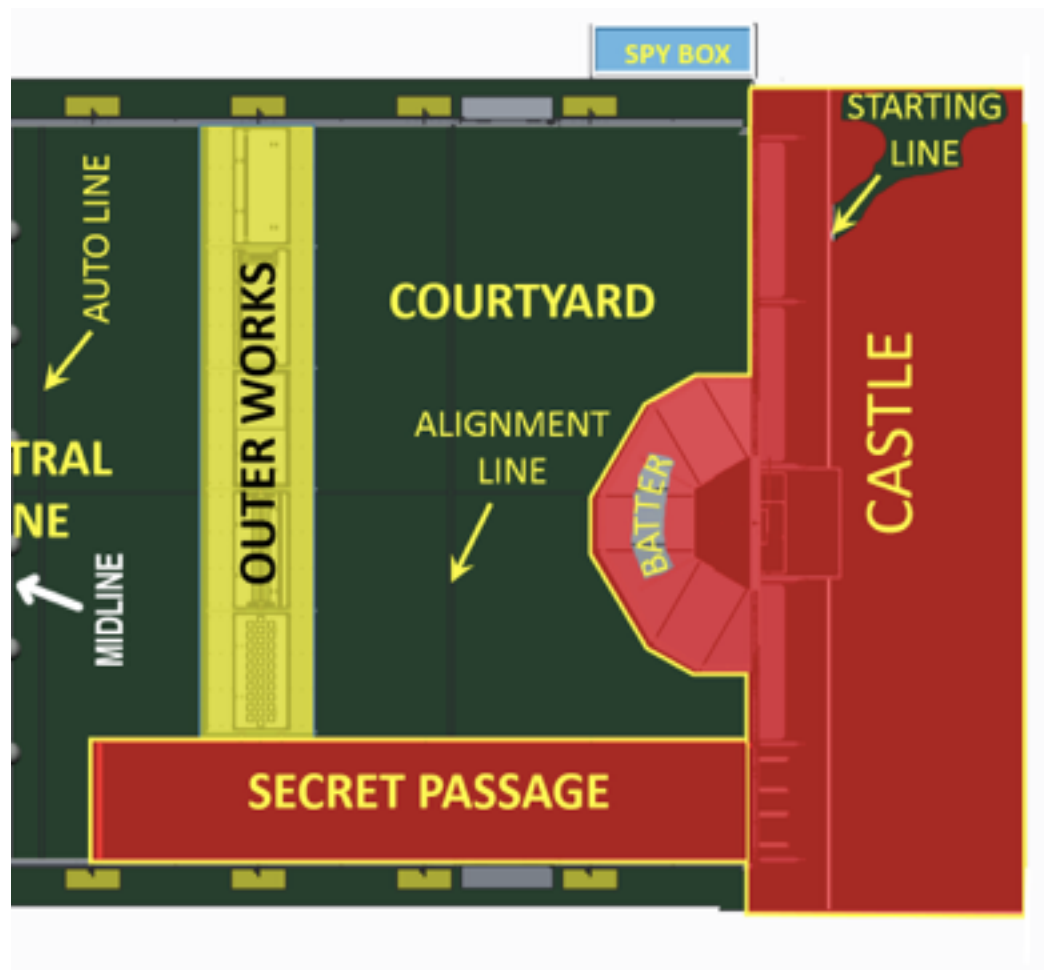
Fill in the blanks with the appropriate missing word(s). (1pt each unless otherwise stated)

1. **BERMS** consist of a steel barrier, 1 in. tall and 3 in. wide that defines the border of the SECRET PASSAGE. **See Section 2.2.2.2**
2. A(n) **EMBRASURE** is a hole at the bottom of the HUMAN PLAYER STATION wall. **See Section 2.2.3.1**
3. The LED light string in the PLAYER STATIONS will pulse at 0.5 Hz when a MATCH is in its final **twenty (20)** seconds. **See Section 2.2.3.1**
4. Before each MATCH begins, **six (6)** BOULDER(S) are staged evenly along the length of the MIDLINE. **See Section 2.3**
5. Each DEFENSE starts the MATCH with **two (2)** STRENGTH. **See Section 3.1.3**
6. Once four (4) out of an ALLIANCE'S five (5) DEFENSES have been DAMAGED, the ALLIANCE'S OUTER WORKS are **BREACHED**. **See Section 3.1.3**
7. Each BOULDER scored in a GOAL decreases the TOWER'S STRENGTH by **one (1)**. **See Section 3.1.4**
8. DRIVE TEAMS may only enter the FIELD if the PLAYER STATION LED strings are **green**, unless explicitly instructed by a REFEREE or an FTA. **See G2**
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 **twenty (20)** seconds of TELEOP where there is no height limit when a ROBOT is fully contained by the opponent's COURTYARD. **See G17**
10. ROBOTS may not pin an opponent's ROBOT for more than **five (5)** second(s). A ROBOT will be considered pinned until the ROBOTS have separated by at least **six (6)** feet. The pinning ROBOT(s) must then wait for at least **three (3)** second(s) before attempting to pin the same ROBOT again. **(3 pts) See G22**
11. At any given time, only one (1) ROBOT may contact the carpet or BATTER inside their **COURTYARD**. **See G26**
12. No more than **six (6)** BOULDER(S) may remain in a CASTLE during TELEOP. **See G34**
13. During Playoff MATCHES, each Team is permitted to have **three (3)** additional "pit crew" members who can also help with needed ROBOT repairs/maintenance. **See Section 5.5.7**
14. The **Head REFEREE** 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. **See Section 5.5.3**
15. In the Playoff MATCHES, each ALLIANCE will be allotted **one (1)** TIMEOUT(S) which may be used to pause the Playoff MATCH progression. **See Section 5.5.6**

16. The Audience selected DEFENSE is located in the OUTER WORKS position **three (3)** for both ALLIANCES. See Section 5.5.10.1

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 | |



See Section 2.1

List the DEFENSES in each category (5 pts) -1/2pt per missing DEFENSE

Category A	Category B	Category C	Category D	non-selectable
Portcullis Cheval de Frise	Moat Ramparts	Drawbridge Sally Port	Rock Wall Rough Terrain	Low Bar

See Section 2.2.2.1

Which of the following electronic components are in the PLAYER STATIONS? For each of the correct answer(s), write "X" in the blank. (3pts) -1/2pt per incorrect item

Y Ethernet Cable

N Classmate Power Adapter

Y Emergency Stop (E-Stop) button

N Flat panel display to show scoring

Y Team LED to indicate robot status

Y Power Outlet

Y LED light string

See Section 2.2.3.1

How long is AUTO? (1pt)

fifteen (15) seconds See Section 3.1.2

How long is TELEOP? (1pt)

two (2) minutes and fifteen (15) seconds See Section 3.1.2

Fill in the table below with the point values for the tasks in FIRST STRONGHOLD. (16 pts) -1/2pt per incorrect item

Action	AUTO	TELEOP	Qual	Playoff
REACHING a DEFENSE	2	-	-	-
CROSSING an UNDAMAGED DEFENSE	10	5	-	-
BOULDER in Low TOWER GOAL	5	2	-	-
BOULDER in High TOWER GOAL	10	5	-	-
CHALLENGE (per ROBOT)	-	5	-	-
SCALE (per ROBOT)	-	15	-	-
BREACH	-	-	1 RP	20
CAPTURE	-	-	1 RP	25

See Section 3.3.1

Which DRIVE TEAM members may operate the ROBOT? For each of the correct answer(s), write "X" in the blank. (2pts) -1/2pt per incorrect item

N COACHES

Y HUMAN PLAYERS

Y DRIVERS

N DRIVERS from another Team

N FIELD STEWARDS

See G35

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

single team **See Section 5.5.4**

Which of the following may lead to a MATCH replay? For each of the correct answer(s), write "X" in the blank. (2pts) if 2 or more correct 1/2pt, if 4 or more correct 1pt, if 7 or more correct 1 1/2pts, if 9 (all) correct 2 pts

N A tie

N Ripped or torn BOULDERS

Y Broken FIELD elements

Y Power failure to a portion of the FIELD

N tripping the circuit breaker in the PLAYER STATION

Y Improper activation by the FMS

Y Errors by FIELD staff

Y a Team STANDARD falling into the FIELD

N 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

See Section 5.5.5

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? **2pts for each point mentioned, up to 6pts**

-not in contact with a BOULDER staged on the MIDLINE

-the only item left on the FIELD by the DRIVE TEAM

-confined to its STARTING CONFIGURATION

-fully contained by the opposite half of the FIELD from their TOWER

-breaking the plane of the AUTO LINE

-or inside the COURTYARD

-in contact with both the CASTLE WALL and GUARDRAIL

-Only one (1) ROBOT per ALLIANCE

-known as the "spy bot,"

See G7

2. All Teams participating in the Tournament are seeded during the Qualification MATCHES. Describe how the seeding order is determined. **1pt for each criteria correctly placed**

Order Sort	Criteria
1 st	Ranking Score
2 nd	Cumulative sum of AUTO points
3 rd	Cumulative sum of scored SCALE and CHALLENGE points
4 th	Cumulative sum of High and Low GOAL points from AUTO and TELEOP
5 th	Cumulative sum of CROSSED UNDAMAGED DEFENSE points (AUTO and TELEOP)
6 th	Random sorting by the FMS

See Section 5.3.4

3. What should a DRIVE TEAM do if they need clarification on a ruling or score? **2pts for each point mentioned, up to 6pts**

- one (1) pre-college student
- address the Head REFEREE
- after the ARENA Reset Signal
- standing in the corresponding Red or Blue Question Box
- Question Boxes are located on the floor near each end of the scoring table
- Head REFEREE may postpone any requested discussion until the end of the subsequent MATCH

4. Describe how DEFENSES are selected for QUALIFICATION MATCHES. **2pts for each point mentioned, up to 6pts**

- Prior to each round of Qualification and Playoff MATCHES, the audience selects one of the DEFENSES used by both ALLIANCES
- The Audience selected DEFENSE is located in the OUTER WORKS position 3
- DEFENSE which receives the loudest response, as judged by the Head REFEREE
- FMS determines the order in which the DEFENSE groups are selected by the audience
- first group is determined randomly, the groups rotate alphabetically for each subsequent selection
- Once in the Queue and no later than the end of the MATCH two (2) MATCHES prior to their scheduled MATCH (i.e. "Queue #2"): Each ALLIANCE selects the DEFENSES
- Each ALLIANCE selects the DEFENSES and DEFENSE locations on the FIELD and communicates the selections to the Defense Coordinator (DC).
- Queued and no later than the start of the MATCH one (1) MATCH prior to their scheduled MATCH (i.e. "Queue #1"): ASAP & concurrently, the DC makes available to each ALLIANCE a map revealing the DEFENSES and locations