

# Robofest Game Unknown Problem Judging Rubric/Guideline

2-28-09

## A Sample Drawing Problem (20 min given)

Draw the following shape (Figure 1) on the paper given. The robot must not be touched by players during the work. Once the robot is touched, the drawing work cannot be continued. If the robot goes out of the paper, the robot must be stopped immediately with no second attempts. The robot may begin the drawing any place on the paper. Record and play function cannot be used.

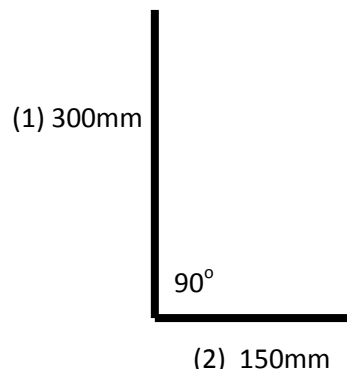


Figure 1

Before the given time is expired, turn in your robot to the judges table. Please tape/mark your team ID on the robot.

How to score (unit mm and degrees)

- How precise the line lengths are. The deduction can be quantified by difference
- How precise the angle is. Deduction can be quantified by difference.
- How straight the lines are. Deduction can be quantified by the variation from straight. Draw a rectangle that contains the entire line drawn by the robot. The width of the rectangle is the deduction. See figure 2.
- How clear/solid the lines are. Deduction can be quantified by the size of the largest gap.
- How sharp the angle is. Deduction can be quantified by the area contained by the angle. Draw a box around the angle. The deduction is the diagonal distance of the rectangle. See figure 3.
- If the pen of the robot goes out of the paper **or** is stopped by human, 50% of the sum of the target lines will be deducted. The scoring is based on only the drawings on the paper. Anything drawn outside the paper will be ignored.

Judges needs to mark the starting line on the paper submitted. Drawing ranking will be based on the penalty score. Tie breaker will be the order of turning in.



Width: 14 mm

Figure 2

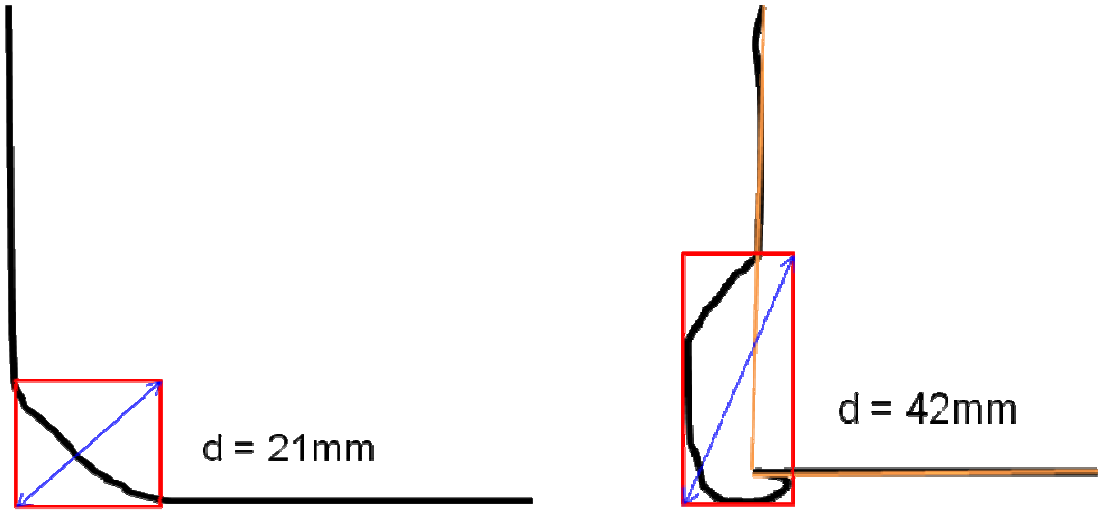
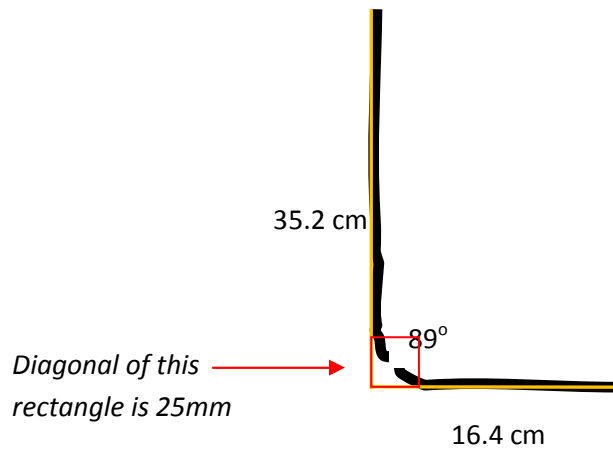


Figure 3

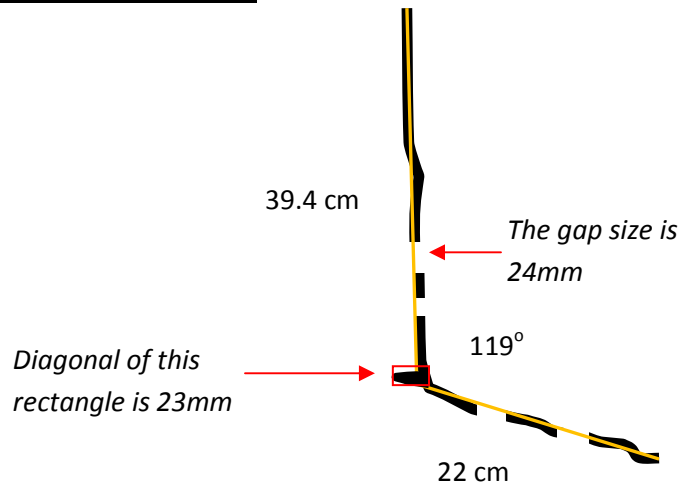
## Sample Scoring 1



Check item	Target	Actual	Difference or penalty
<b>Line (1)</b>	300	352	52
Straightness			8
<b>Line (2)</b>	150	164	14
Straightness			5
<b>Angle</b>	90	89	1
Angle quality			25
<b>Line solidness (the size of the largest gap)</b>			5
<b>Went outside or stopped by human? If yes, penalty is 225</b>			0
<b>Total deductions</b>			<b>110</b>

(unit: mm or degrees)

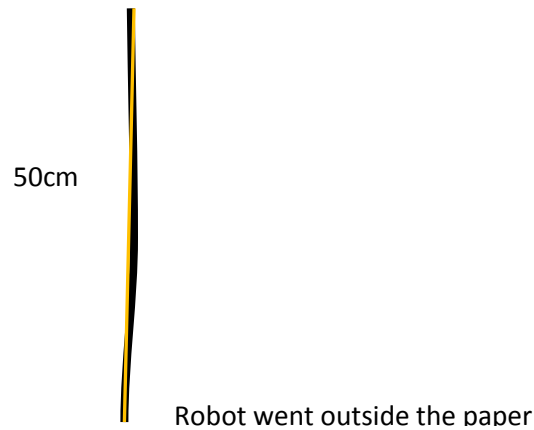
## Sample Scoring 2



Check item	Target	Actual	Difference or penalty
<b>Line (1)</b>	300	394	94
Straightness			10
<b>Line (2)</b>	150	220	70
Straightness			8
<b>Angle</b>	90	119	29
Angle quality			23
<b>Line solidness (the size of the largest gap)</b>			24
<b>Went outside or stopped by human? If yes, penalty is 225</b>			0
<b>Total deductions</b>			<b>258</b>

(unit: mm or degrees)

## Sample Scoring 3

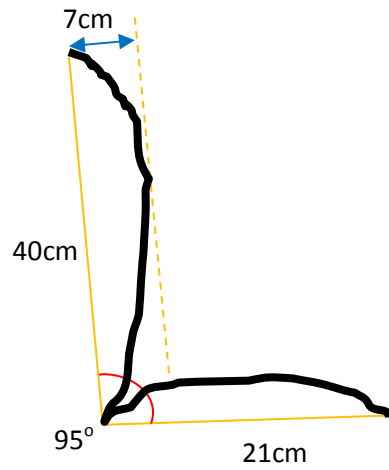


Check item	Target	Actual	Difference or penalty
<b>Line (1)</b>	300	500	200
Straightness			10
<b>Line (2)</b>	150	0	150
Straightness*			150
<b>Angle</b>	90	0	90
Angle quality			0
<b>Line solidness (the size of the largest gap)</b>			0
<b>Went outside or stopped by human? If yes, penalty is 225</b>			225
<b>Total deductions</b>			<b>725</b>

(unit: mm or degrees)

(\*) If no line is drawn, the assign the line length as the penalty for the Straightness

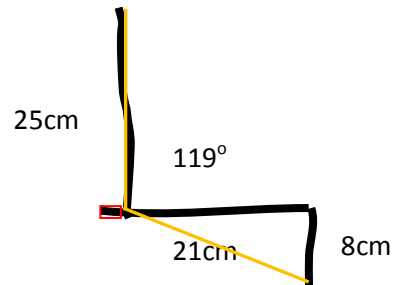
## Sample Scoring 4 (curved line)



Check item	Target	Actual	Difference or penalty
<b>Line (1)</b>	300	400	100
Straightness			30
<b>Line (2)</b>	150	210	60
Straightness			15
<b>Angle</b>	90	95	5
Angle quality			0
<b>Line solidness (the size of the largest gap)</b>			0
<b>Went outside or stopped by human? If yes, penalty is 225</b>			0
<b>Total deductions</b>			<b>210</b>

(unit: mm or degrees)

**Sample Scoring 5** (drew more. Consider it as extension of the last line)



Check item	Target	Actual	Difference or penalty
<b>Line (1)</b>	300	250	50
Straightness			10
<b>Line (2)</b>	150	210	60
Straightness			100
<b>Angle</b>	90	119	29
Angle quality			40
<b>Line solidness (the size of the largest gap)</b>			0
<b>Went outside or stopped by human? If yes, penalty is 225</b>			0
<b>Total deductions</b>			<b>289</b>

(unit: mm or degrees)

## Sample Scoring 6

The team drew nothing.

Check item	Target	Actual	Difference or penalty
<b>Line (1)</b>	300		
Straightness			
<b>Line (2)</b>	150		
Straightness			
<b>Angle</b>	90		
Angle quality			
<b>Line solidness (the size of the largest gap)</b>			
<b>Went outside or stopped by human? If yes, penalty is 225</b>			
<b>Total deductions</b>			<b>infinite</b>

(unit: mm or degrees)



# ROBOFEST 2009 Game Drawing Challenge Scoring Sheet

Team ID \_\_\_\_\_ Team Age Division: Jr. Sr.

Team Name \_\_\_\_\_

Check item	Target	Actual	Difference or penalty
<b>Line (1)</b>			
Straightness			
<b>Line (2)</b>			
Straightness			
<b>Angle</b>			
Angle quality			
<b>Line solidness (the size of the largest gap)</b>			
<b>Went outside or stopped by human? If yes, penalty is 225</b>			
<b>Total deductions</b>			

(unit: mm or degrees)

Judge Name: \_\_\_\_\_

Judge Signature: \_\_\_\_\_