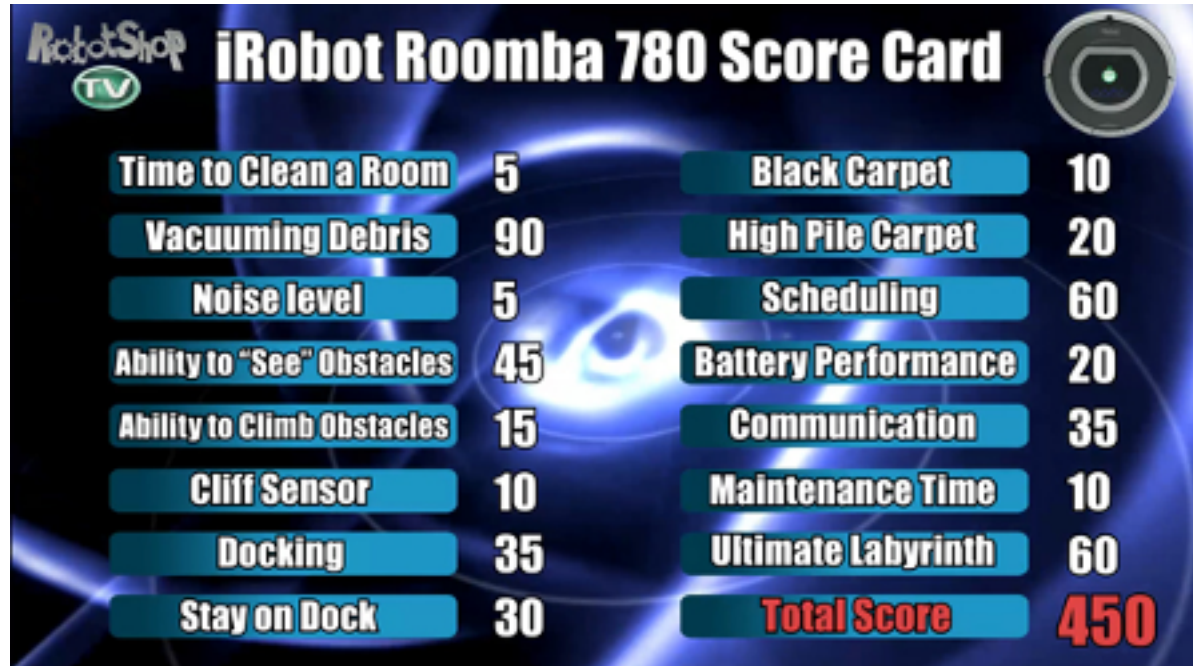


RobotShop Ultimate Challenge - Domestic Vacuum Robots

Robot: Roomba 780



Challenge 1: Time to Clean a Room

Time: 22 min 01 sec

Total Points: 5

Challenge 2: Vacuuming Debris

Debris type 1: Paper  
 Hard Floor  
 Total weight of debris: 20g  
 Weight of debris picked up: 12g  
 % of Debris Vacuumed: 60%  
 Points: 10

Carpet  
 Total weight of debris: 20g  
 Weight of debris picked up: 13g  
 % of Debris Vacuumed: 65%  
 Points: 10

*Debris type 2:* Nuts and Screws

Hard Floor

Total weight of debris: 140 pieces

Weight of debris picked up: 113

% of Debris Vacuumed: 80.7%

Points: 30

Carpet

Total weight of debris: 140 pieces

Weight of debris picked up: 139 pieces

% of Debris Vacuumed: 99.3%

Points: 40

*Debris type 3:* Hair and Dirt

Hard Floor

Total weight of debris: 20g

Weight of debris picked up: 10g

% of Debris Vacuumed: 50%

Points: 0

**Total Points: 90**

Carpet

Total weight of debris: 20g

Weight of debris picked up: 8g

% of Debris Vacuumed: 40%

Points: 0

### **Challenge 3: Noise Level**

Hard Floor

Peak decibel level: 70.3

Points: 0

**Total Points: 5**

Carpet

Peak decibel level: 68

Points: 5

### **Challenge 4: Ability to 'See' Obstacles:**

*Touch/Bump Test (#)*

Avoids wall: 0

Soft touch: 19

Hard bump: 3

Points: 35

*Curtain Test (check one)*

Gets stuck:

Doesn't get stuck:

Gets stuck and frees itself: Y

Points: 5

*Electrical Wires (check one)*

Gets stuck:

Doesn't get stuck:

Gets stuck and frees itself: Y

Points: 5

**Total Points: 45**

**Challenge 5: Ability to Climb Obstacles**

*Cliff height:* 0.5cm  
Climbs: Y  
Doesn't climb:  
Gets stuck:  
Points: 5  
**Total Points: 15**

*Cliff height:* 1.0cm  
Climbs: Y  
Doesn't climb:  
Gets stuck:  
Points: 10

*Cliff height:* 2cm  
Climbs:  
Doesn't climb: Y  
Gets stuck:  
Points: 0

**Challenge 6: Cliff Sensors**

Doesn't fall: Y  
Gets stuck:  
Falls:  
**Total Points: 10**

**Challenge 7: Time/tries to return to Dock**

Time: 30 sec  
# of failed docking attempts: 0  
# of Attempts: 1  
Total Points: 35

**Challenge 8: Stay on Dock**

*Distance:* 2"  
Docks in one try: Y  
Docks in multiple tries:  
Robot is lost:  
Points: 10

*Distance:* 36"  
Docks in one try: Y  
Docks in multiple tries:  
Robot is lost:  
Points: 10  
**Total Points: 30**

*Distance:* 12"  
Docks in one try: Y  
Docks in multiple tries:  
Robot is lost:  
Points: 10

**Challenge 9: Black Carpet**

Cleans w/o problem: Y  
Cleans and gets error:  
Doesn't start:  
**Total Points: 10**

**Challenge 10: High Pile Carpet**

Cleans w/o problem: Y  
Cleans and gets error:  
Doesn't move properly:  
Brushes stop turning:  
**Total Points: 20**

**Challenge 11: Scheduling**

Scheduling (Y/N): Y	Time: 15 sec
mon, wed, fri	
Scheduled time to program: 2pm	Points: 30
Points: 30	
<b>Total Points: 60</b>	

**Challenge 12: Battery**

Total run time: 239.82 min  
Time to Clean Room: 22.01 min  
Optimal Cleaning Ratio: 10.89  
**Total Points: 20**

**Challenge 13: Communicating State and Errors***Jammed Brushes*

No communication:  
Beeps:  
Displays:  
Speaks: Y  
Points: 5

*Jammed Wheel*

No communication:  
Beeps:  
Displays:  
Speaks: Y  
Points: 5

*Obstructed Cliff Sensors*

No communication:

Beeps:

Displays:

Speaks: Y

Points: 5

*Particle Bin Full*

No communication:

Beeps:

Displays: Y

Speaks:

Points: 5

*Battery Dead*

No communication:

Beeps:

Displays:

Speaks: Y

Points: 5

Communicates via internet (Y/N): N

Conserves Error with action: Y

Conserves error without action:

Points: 10

**Total Points: 35**

**Challenge 14: Maintenance Time**

Time to clean brushes, filter, dustbin: 4 min 58 sec

**Total Points: 10**

**Challenge 15: Ultimate Labyrinth**

Completed labyrinth A (Y/N): Y

Time: 57 sec

Points: 25

**Total Points: 60**

Completed labyrinth B (Y/N): Y

Time: 2 min 49 sec

Points: 15

**Grand Total: 450**