

Roomba® i7 Teardown

In this activity, we invite you to join us in taking apart a Roomba®! Watch as two of our iRobot Engineers get out their screwdrivers, and see what's inside that makes it work. We've asked some questions for you to answer as you watch.

Remember, **don't take apart your family's Roomba®! Check first, so you don't end up without a robot vacuum.*

Question #	Clue (solve the problem to see the time during the video where this question happens—your answer will be minutes and seconds. i.e., 128= 1 min 28 sec)	Timestamp	Question	Answer
1	$4 \times 29 =$	1:16	What is interesting about taking apart a robot vacuum?	
2	$25 \times 6 =$		What is Roomba's purpose? What is its job?	
3	$(50 \times 2) + 29 =$		What is something you need to wear for safety before taking anything apart?	
4	$(100 \times 2) + 10 =$		Draw the pattern on the rubber rollers (extra points if you tell us what Irene calls the shape)	
5	$220 - 5 =$		What part helps scoop up the dirt into the bin?	

6	$(400 / 2) + 18 =$		What is the dirt detect sensor actually called?	
7	$468 / 2 =$		Why are you able to wash the bin in this robot? What is missing?	
8	$(100 \times 3) + 5 =$		What part helps get the dirt out of corners and along the walls?	
9	$(600-300)+(10 \times 4) =$		Why did they need to take the battery out of the robot?	
10	$(800/2)+(5 \times 2) =$		What does the “halo” feature of the RCON do?	
11	$531 - 27 =$		Pick one—a cliff sensor is an: Acoustic Sensor? Optical Sensor? Temperature Sensor?	
12	$500 + (4 \times 5) =$ $600 - 15 =$		Let’s add: If you count all the FRONT cliff sensors and ALL the wheels on Roomba—how many parts do you have?	
13	$(200 \times 4) + (30 - 2) =$		What does the Polarity switch in the Roomba wheel module do?	

14	$900 - 45 =$		Before the optical sensors, the robot had a two-color caster wheel—what colors were they?	
15	$(1800/2)+(40+3) =$		Electrostatic discharge (ESD) is affectionately referred to as what, by Irene?	
16	$(250 \times 4) + (4 \times 7) =$		What do we call the kind of screws that connect the cleaning head to the chassis (body) of the robot?	
17	$2240 / 2 =$		Roomba has 3 stages of cleaning—which one is missing? Agitation, suction and...	
18	$400 \times 3 =$		Why were the bristle brushes Roomba had before rollers a problem?	
19	$50 \times 27 =$		How long can it take for the initial robot development?	
20	$200 \times 7 =$		Name three types of testing that Roomba has to pass	