

# 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 <small>(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)</small>	Timestamp	Question	Answer
1	$3 \times 2 =$	0:06	What is interesting about taking apart a robot vacuum?	
2	$7 - 1 =$		What is something you need to wear for safety before taking anything apart?	
3	$(8 \times 2) + 1 =$		What is Roomba's purpose? What is its job?	
4	$64 - 6 =$		Draw the pattern on the rubber rollers (extra points if you tell us what Irene calls the shape)	
5	$(50 \times 2) + 3 =$		What part helps scoop up the dirt into the bin?	

6	$(200 / 2) + 8 =$		What is the dirt detect sensor actually called?	
7	$244 / 2 =$		Why are you able to wash the bin in this robot? What is missing?	
8	$74 \times 2 =$		What part helps get the dirt out of corners and along the walls?	
9	$(4 \times 50) + (7 \times 4) =$		Why did they need to take the battery out of the robot?	
10	$242 + 17 =$		What does the “halo” feature of the RCON do?	
11	$398 - 47 =$		Pick one—a cliff sensor is an: Acoustic Sensor? Optical Sensor? Temperature Sensor?	
12	$(4 \times 100) + 11 =$ $(7 \times 5) + 400 =$		Let's add: If you count all the FRONT cliff sensors and ALL the wheels on Roomba—how many parts do you have?	
13	$268 \times 2 =$		What does the Polarity switch in the Roomba wheel module do?	

14	$106 \times 7 =$		Before the optical sensors, the robot had a two-color caster wheel—what colors were they?	
15	$(4 \times 200) + 29 =$		Electrostatic discharge (ESD) is affectionately referred to as what, by Irene?	
16	$(3 \times 300) + (7 \times 2) =$		What do we call the kind of screws that connect the cleaning head to the chassis (body) of the robot?	
17	$(200 \times 5) + (3 \times 3) =$		Roomba has 3 stages of cleaning—which one is missing? Agitation, suction and...	
18	$50 \times 21 =$		Why were the bristle brushes Roomba had before rollers a problem?	
19	$(2400 / 2) + 47 =$		Name three types of testing that Roomba has to pass	
20	$1164 + 75 =$		How long can it take for the initial robot development?	