



# Reading 249

You are going to read the text about the search-and-rescue robots. For questions 1–6 choose from paragraphs A–G the one which fits each gap. One paragraph you don't need to use.

## "Robots to the Rescue"

In the war on terror, University of South Florida (USF) engineering Professor Robin Murphy finds herself a pioneer on the front line with a new kind of soldier: the search-and-rescue robot. Scattered about are piles of broken concrete blocks and pipes, metal and dirt. Amid the broken stones, a small black object looking like some futuristic toy tank rolls into view. It surveys the damage, edges forward, climbs over a mound of debris, then stops. Suddenly, the rubber treads shift from horizontal to vertical, raising the lens into a better vantage point to transmit images. The robot has done its job.

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She looks like an emergency worker ready for action: work boots, navy-blue trousers, white hardhat over her short brown hair. One moment, she's answering questions from scientists. The next, she's racing to another robot demonstration, always keeping the program moving. In a larger sense, that's what Murphy does best - she keeps the relatively new field of robotics and rescue moving forward. January's "Discover" magazine honored Murphy in its "Top 100 Science Stories of 2002" edition.

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Murphy, at 46, is in demand these days. When she's not teaching at USF, she's travelling the country giving presentations, serving as a co-chair on various committees, or coordinating with the Department of Defence. Murphy is hardly the stiff scientist one might expect from a robotologist. She is disarmingly casual in conversation. Yet she is also intense, pushing herself and the people around her. What separates Murphy from her colleagues is that many of them don't get out into the field. But that's where she thrives, and where she gets the knowledge to make her robots successful.

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"Imagine the scenario where something green is hanging over the city and you don't know what it is and or where it's coming from", she says. "These guys can roll in, and throw a robot off the back of a truck to carry all the gas meters and detectors. Then, the rescuers are able to figure out what safety precautions to take. The robots will help the rescuers make the right decisions."

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Later, her work began to gain attention when she was a professor at the Colorado School of Mines, where she taught before going to USF six years ago. There, her ideas impressed Rita Virginia Rodriguez of the National Science Foundation. Rodriguez began funding Murphy's work in Colorado, and continues to do so at USF. "Robin is one of the most important people in this movement," says Rodriguez. "She's one of the engineers who is very good, very forward-thinking. What we've seen today is the first workshop of its kind and it is all her initiative."

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The birth of robot-assisted search and rescue began with one of the nation's worst disasters: the 1995 bombing in Oklahoma City. One of Murphy's graduate students, was appalled at the large, clumsy robots that sat unused in a car park. John Blitch of the Defense Advance Research Project Association soon helped create a Defense Department programme to build small, mobile robots for battlefield applications. At the same time, Murphy and her students began focusing on software: how to control robots, how to integrate them with a computer. When 9/11 occurred, Murphy was there immediately. Yet her team was not accepted right away.

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The work never ends. Murphy says, "I just want to be of use. Look at what the guys in fire and rescue service have to do. The technology is there to help them, and it's up to scientists to provide the right technology to fit to the right people at the right time."

#### **List of choices:**

A Her father was a mechanical engineer, so it was in the family. As a child she immersed herself in science fiction: "I never really identified with the heroes," she says. "I always thought the scientists who built things for these guys were far more interesting." She earned her Master's degree in computer science at Georgia Tech., won a fellowship and worked for a professor with expertise in artificial intelligence and within two months, she was on her way to her Ph.D.

B At first, the USF contingent had trouble getting through the police lines. "The fire and rescue teams were a bit suspicious, because when they think of robots, they think of big explosive ordnance devices," she says. But eventually they were able to get close enough

to help, and the smaller robots proved remarkably effective. Murphy has moved at an intense pace ever since, working to become even more effective in the event of another terrorist attack.

C Applause fills the breezy morning air. Some 50 scientists are impressed by the brief demonstration of the VGT, Variable Geometry Tracked Vehicle. They have come from universities, industry, the military and countries as far away as Japan, Sweden, Italy and England. They have left their classrooms, computers and academic theory behind to get their hands a little dirty: to see an array of search-and-rescue robots perform in simulated conditions. And they are all here because of Professor Robin Murphy.

D Murphy and her students don't actually build the robots. What they do, in essence, is take models made by companies and create the software programmes to adapt them to search and rescue. The little VGT that performed so effectively in the rubble of the twin towers collapse had been built to explore air-conditioning ducts. They gave it a new brain and figured out ways to transport it in a backpack and deploy it at a moment's notice.

E However, there are still many problems with the whole project. Funding is the main one. Murphy often struggles to gain funding from the usual channels due to her lack of an academic background which tends to put off a lot of potential sponsors. They seem to ignore the fact that her achievements have more than made up for any official qualifications that she may be missing. It remains to be seen if this will, in the end, be the cause of the demise of her work.

F The workshop is full of innovations. Nearby, a team from the University of Minnesota displays its robot named Scout - a tiny tube with two wheels and an antenna. One of the inventors picks Scout up and tosses it on the pavement. No problem. It keeps rolling. "People are starting to see what robots can do", Murphy says. "One thing we're trying to do is help rescue workers learn what's possible."

G She was featured for her advances with rescue robots, in particular the work she and several graduate students performed at the World Trade Centre. With a cadre of robots packed in the back of her husband's van, they arrived on September 12, 2001 and stayed for eleven days. A handful of the small VGT robots squeezed deep into the collapse, helped identify five victims, and transmitted many detailed videos and photos. "But", she says, "we weren't in Discover just because we were at the World Trade Centre. It's what we've done since."

*Источник задания: финал Плехановской олимпиады школьников 2019/20*

# Reading 249 — Keys

1 — C

2 — G

3 — D

4 — A

5 — F

6 — B