



This article is about designing roller coasters and other thrill rides. It is a difficult job that requires much attention to details. Now read about a woman named Jennifer who is a roller-coaster engineer. Then answer the questions that follow.

Queen of Scream

- Jennifer Jairala grips the rail of one of the water rides at Universal Studios' new theme park in Osaka, Japan. She knows the drop is coming, but she still feels a thrill as the boat falls over the edge. Jennifer is one of the park's ride-show engineers. She helps design, build, and test some of the scariest rides in the world. You might even call her the Queen of Scream.

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Engineers put the Jurassic Park ride at Universal Studios Japan through many test rides before the first passengers were permitted to ride.

Photograph courtesy of © Reuters NewMedia Inc./CORBIS.



- 2 How did Jennifer get what she calls her dream job? She says it all started with a childhood interest in how things work. While she was growing up in Chicago, Jennifer was constantly trying to fix anything in her house that broke. Also, she was a good student. She says that when people asked her what her favorite subject was, she would reply, "All of them." After graduating from high school, Jennifer went to Cornell University, where she earned a bachelor's degree in mechanical engineering. Now she works for one of the biggest theme-parks in the world.
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1. What is paragraph 2 mainly about?
 - A. The school where Jennifer went to college
 - B. Jennifer's favorite subject in school
 - C. How Jennifer became a roller-coaster engineer

2. What did Jennifer have to do before she got a job as a roller-coaster engineer?
 - F. Design a new roller coaster
 - G. Earn a degree in mechanical engineering
 - H. Work at a theme park for a year

GO ON 

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3. Which sentence from paragraph 2 supports the idea that Jennifer has always liked working with machines?

A. *How did Jennifer get what she calls her dream job?*

B. *While she was growing up in Chicago, Jennifer was constantly trying to fix anything in her house that broke.*

C. *Also, she was a good student.*

3 Although the theme park where Jennifer works has been open for approximately a year, she has worked there for about two years. Before the park opened, Jennifer oversaw the construction of the rides. Although customers are hoping to be scared on the rides, the park obviously doesn't want to really imperil its customers. It was Jennifer's job to check the rides at each step to make sure they were being built correctly. The rides go through many tests before any passenger is allowed to board. For example, the roller coasters are first tested with sandbags that weigh about the same as a passenger. Jennifer and other engineers also took many test rides. Jennifer enjoys the thrill of testing a new ride, but she keeps safety first in her mind.

4. What does the word imperil mean in paragraph 3?

F. Treat differently

G. Put in training

H. Put in danger

GO ON 

- 4 Roller-coaster engineers like Jennifer say the best part of designing roller coasters is turning fear into fun. Amusement-park designers and engineers always try to make roller coasters look and feel as frightening as possible, without being dangerous. They sometimes make the coaster look old. They might play strange noises over the sound system or run the coasters through dimly lit tunnels. Then most coasters excite the rider with a slow climb to the top before the first drop. Wooden coasters make clickity-clack sounds, shake, tremble, and whine as the cars climb. It's all part of what makes the coasters fun. Though coasters are usually slower than the speed limit on most highways, they seem faster. The closeness of things flashing by and the jerky, rough ride make passengers feel as if the roller coaster is out of control. Not all of these effects are an illusion. On some drops passengers are put through forces of gravity (called G's) more than four times as strong as normal. Loops and corkscrews turn the riders around, forcing the breath out of them.

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5. Why do designers sometimes make roller coasters look older?
- A. To make working on them easier
 - B. To make the ride seem frightening
 - C. To make the riders feel safe
-

GO ON 

- 5 There is much more to planning amusement-park rides than scaring people. Roller-coaster engineers must keep other factors in mind when building a ride. They must build a scary ride that will keep customers coming back. Therefore, designers look for a balance.

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- Jennifer and other engineers must also pay attention to the length of the ride. Gravity determines how long the coaster's momentum will keep it going. No matter how tall the coaster is, rides will usually last only about a minute after the first drop begins. Customers want their money's worth if they have to wait in long lines. With this in mind, engineers sometimes extend the length of a ride by using machinery to pull the coaster back up for more drops.



Photograph courtesy of © Kelly-Mooney

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6. According to the article, why do engineers sometimes try to extend the length of a ride?
- F.** To make sure that customers are satisfied
- G.** To keep customers from riding more than once
- H.** To allow more customers to ride at one time
-

GO ON 

- 7 On the other hand, rides can't last too long. Engineers like Jennifer must keep in mind how many thrills passengers can take in just a few minutes. It's also important to limit the length of a ride so that people aren't kept waiting. Theme parks want customers to buy snacks and souvenirs instead of waiting in a line. Shorter waits also mean that customers are likely to come back. Engineers must also think about how easy it is to get into and out of the rides, and the best way to deal with large groups that want to ride together.
- 8 Now that Universal Studios Japan is open, Jennifer spends most of her time testing and checking rides to make sure that they are working properly and are safe. However, she still helps with the design of new rides for the park. Someday she plans to go back to school for an advanced college degree. Right now, though, she's happy to see another part of the world and work in her dream job.



**Use the whole article “Queen of Scream” on pages
1 to 6 to answer questions 7-10.**

7. The reader can conclude that Jennifer —
- A. doesn't really enjoy testing rides.
 - B. worked as a ride operator during high school.
 - C. works on other types of rides besides roller coasters.
8. From the information in this article, the reader can conclude that most roller coasters —
- F. take several years to plan and build.
 - G. are actually dangerous to ride.
 - H. travel at the same speeds.

GO ON 

9. Read this part of an outline of information from the article.

A. Jennifer's duties at the theme park

1. Help design and build coasters
2. Test coasters for safety
3. _____

Which detail belongs in the blank?

- A.** Take college courses
- B.** Make scary noises during the ride
- C.** Check that coasters continue to work properly
- 10.** Which of these is the best summary of this article?

F. Jennifer Jairala grew up in Chicago. After she graduated from high school, she went to college and earned a degree in mechanical engineering. She works for Universal Studios Japan.

G. Roller-coaster engineer Jennifer Jairala helps design and test roller coasters and other amusement rides. Jennifer and other engineers design rides to be scary but safe. They also want the coasters to be fun and easy to ride.

H. Jennifer Jairala works as a roller-coaster engineer for one of the largest theme-park companies in the world. Jennifer studied engineering at Cornell University. The theme park where she works is in Osaka, Japan, and has been open for only about a year.



11. How does the author organize the article?

A. By describing a theme park from the entrance to the exit

B. By comparing and contrasting different roller coasters

C. By explaining the job of a rollercoaster engineer





This article is about a man who tries to rescue his family from Cuba and return with them from the United States. Orestes Lorenzo's wife and two sons lived in Cuba for nearly two years while they waited for him to return. Now read about the family's daring escape. Then answer the questions that follow.

Together Forever

1 Orestes Lorenzo stared out at the darkening waters of the Caribbean. "It can't be much farther," he thought, trying to see the coast of Cuba, his homeland. Now he was returning, but only for a short time. He planned to land his small plane on a highway near the coast just long enough to rescue his wife and two sons, and return with them to the United States and freedom.

2 There it was: the slopes of Pan de Matanzas! "They've spotted me by now," Orestes thought. He had flown the last half hour just a few feet above the ocean, hoping to avoid the Cuban Air Force's radar. But this close to the coast, the radar would have spotted him even at that height. He imagined the air force answering an alert that an unidentified aircraft was nearing the coast. As a member of the Cuban Air Force for more than 10 years, he felt sure that an air-defense missile had been fired. Unless he could pick up his family quickly and get far enough away, he knew that his small plane could be destroyed at any moment. His heart pounded. Everything needed to go perfectly.

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12. Why did Orestes fly his airplane just a few feet above the ocean?

F. To make it easy for his family to see the plane

G. To make a quicker landing

H. To avoid being seen by the air force's radar

3 As Orestes' plane raced toward the coast, he thought back to the last time he had seen his homeland. Almost 21 months before, he had been in a Cuban Air Force fighter jet. That day he had made the most difficult decision of his life: he left Cuba for the United States. Angry and disappointed by a government he felt was unjust, he had decided to risk everything for a new beginning. After talking about it with his wife Vicky, he decided to fly his plane to the United States to begin a new life. Orestes and his wife felt that the Cuban government would be forced to allow her and the children to join him in the United States. However, the Cuban government refused, even after the president of the United States asked. Angry with Orestes for leaving with a government plane, Cuban leaders dared him to come back and get his family. Realizing that the Cuban government would never let his family leave, Orestes did just that.

13. Why is paragraph 3 important to the article?

A. It describes the government in Cuba.

B. It explains why Lorenzo had to return to Cuba.

C. It tells how long it had been since Lorenzo had seen his family.

GO ON 

14. Which information from the article shows that Orestes' rescue plan was dangerous?

- F.** The highway was too close the coast.
- G.** He had taken an air force jet.
- H.** Cuban leaders dared him to return.

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am reading*

4 Orestes slowed the plane and looked for the highway alongside El Marney Beach. Just the night before he had sent a secret message telling his wife where to meet him. So many things could have gone wrong. As he looked for the highway, he worried. It would be impossible to land if the traffic were too heavy. At last he saw the narrow road next to the coast. Flying low over cars and trucks, he searched ahead for his family. Then he spotted three orange dots. They had made it! Orestes prepared to land, but a bus and a small white car were in his way. He flew low over the car, nearly scraping it with his landing gear. Then he saw a new problem, a large rock. Lorenzo started to go around it, but a traffic sign was in his way. He couldn't risk hitting the plane's wing on that sign. The plane slammed down, somehow missing the rock, and Orestes hit the brakes.

15. The reader can conclude that Orestes—

- A.** had told his family to wear orange clothes.
- B.** knew the bus driver on the highway.
- C.** had landed on the highway many times before.

GO ON 

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- 5 Orestes looked behind him. He saw his wife and two sons running for the plane. He held the controls and slowly turned the plane around. Traffic on the highway had stopped all around him. To Orestes it seemed as if his wife and sons were moving in slow motion. He couldn't afford to get out and help them. Finally, they were there. "Watch the propellers," he thought, turning the plane sideways to make it easier for them to get inside. He pulled open the door, and his 11-year-old son Reyniel climbed aboard.
- 6 "Daddy!" The voice of his six-year-old filled the cabin. He glanced at his watch as his son, Alejandro, climbed into the backseat with his brother. The seconds seemed like minutes.
- 7 Finally, Orestes' wife climbed into the plane. Her eyes were wet. Orestes felt tears filling his eyes too as he thought of what she had to endure for nearly two years. Orestes reached to close the door. It was jammed and wouldn't close! He tried again, but it was still stuck.

16. Why did Orestes feel tears filling his eyes when his wife finally got into the plane?

F. He thought his wife might not want to live in the United States.

G. He was angry at his wife for taking so long to get into the plane.

H. He knew his wife had suffered greatly since he left her behind.

GO ON 

- 8 "Calm yourself, calm yourself!" he told himself. He grabbed the door with both hands, and finally it closed. Gunning the engine, Orestes raced the plane back down the highway. He looked at his watch. It hadn't quite been a minute since he had landed. Lorenzo steered quickly around the oncoming cars. A curve was just ahead in the highway. He had to get the plane into the air before he reached it, but he wasn't going fast enough. He pulled the controls all the way back, and the plane slowly climbed into the sky, brushing the tops of the palm trees that lined the highway. "We did it!" he shouted. "We did it!" But Orestes knew they weren't safe yet. They needed to get farther away.
- 9 When they had reached the 12 1/2-mile point and missiles were no longer a danger, Orestes cried again, this time with certainty, "We did it! We're together forever."
- 10 "Forever!" his wife repeated.



Orestes Lorenzo and his family after Lorenzo rescued them and returned to the United States on December 19, 1992.

Photograph courtesy of © Reuters NewMedia



- 17.** The danger to the Orestes family wasn't over even after they took off, because —
- A.** missiles could still have reached the plane
 - B.** he couldn't see well through the fog
 - C.** the plane was too heavy
- 18.** To the Orestes family, the United States is a symbol of —
- F.** family
 - G.** government
 - H.** freedom

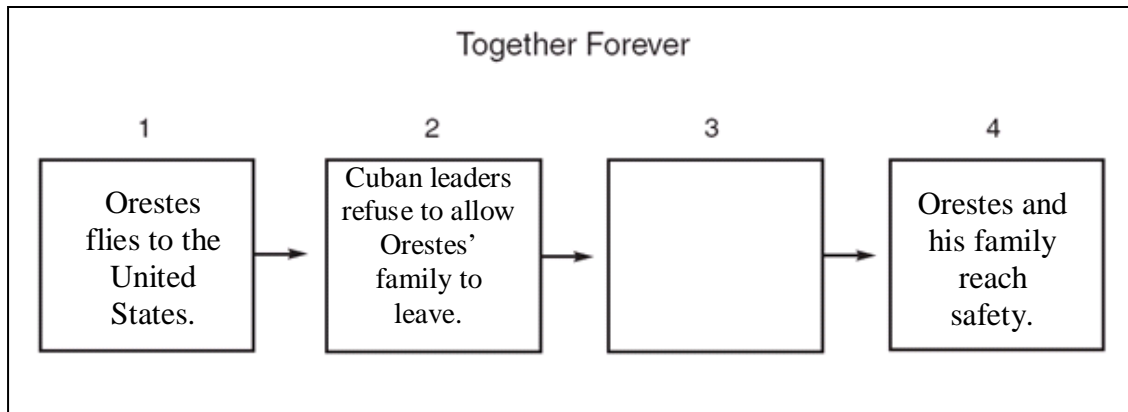


Use the whole story “Together Forever” on pages 10 to 14 to answer questions 19-22.

19. The mood of this article is —

- A. calm and hopeful
- B. adventurous and fearful
- C. exciting and successful

20. Look at the following diagram of events from this selection.



Which of the following belongs in the empty box?

- F. Orestes and his family celebrate their trip.
- G. The U.S. president asks Cuba to let Orestes’ family to join him in the United States.
- H. Orestes flies a small plane to the coast of Cuba and rescues his family.



- 21.** What is the most likely reason the author wrote the article?
- A.** To describe a family's daring escape from Cuba
 - B.** To persuade Cuba to allow Orestes' family to leave
 - C.** To compare the Cuban and U.S. governments
- 22.** Which of these is the best summary of this article?
- F.** Orestes Lorenzo flew a Cuban fighter jet to the United States to start a new life. When Cuban leaders refused to allow Orestes' family to join him, he decided to fly back to Cuba. He landed a small plane on a highway, where he rescued his family and returned with them to the United States.
 - G.** Orestes Lorenzo had been in the Cuban Air Force for more than 10 years. One day he made the most difficult decision of his life. Orestes decided to risk everything to fly his fighter jet to the United States and begin a new life.
 - H.** Orestes Lorenzo landed his small plane on a highway near El Marney Beach in Cuba. The highway was busy, and Orestes almost wrecked the plane during the landing. His wife and sons ran to the plane and got inside. Orestes took off again, dodging oncoming traffic and barely clearing the palm trees that lined the side of the highway.





This story is about a man named Nelson Mandela who is from South Africa. He fought for the rights of black South Africans and even went to jail. Now read about Nelson Mandela. Then answer the questions that follow.

I Have Crossed Famous Rivers

- 1 Hundreds of cameras clicked as Nelson Mandela walked toward the gates of Victor Verster Prison in South Africa. Mandela had been told to expect a large crowd, but he was still surprised by what he saw. Outside the gates thousands of people waited. Freedom was just 50 feet away. Mandela moved forward, but each step seemed to take him back.

- 2 Mandela had been in prison for more than 27 years. Like all black South Africans, he had lived with discrimination his entire life. South Africa's white minority ruled the country, though they were only 25 percent of the population. The government of South Africa felt that white and black citizens should be kept apart. Mandela had attended black-only schools, lived in black-only towns, and traveled on black-only buses and trains. He had never been able to vote. As a young man Mandela had joined the African National Congress (ANC), a group that fought for the rights of black South Africans. Being a knowledgeable attorney, he soon became one of the ANC's leaders.

My notes about what I am reading

Discrimination: to make distinctions in treatment; show bias or prejudice

23. Paragraph 2 is mainly about —

- A. the government of South Africa
- B. traveling on black-only buses and trains
- C. the discrimination faced by Mandela and other black citizens in South Africa

GO ON

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24. Why was Mandela forced to travel on black-only buses and trains?

F. South Africa's leaders believed that black people and white citizens should be kept apart.

G. It cost too much to ride the same trains and buses as white citizens.

H. He didn't have a car.

3 When Mandela was 30 years old, the white-controlled National Party won control of the South African government. Though South Africa had been racially segregated for years, the National Party began to further rights of black people. A new policy of apartheid ("apartness") was adopted. Laws were created to ensure that South Africa's money and power stayed under white control. These laws separated all people by race and outlawed marriages between different races. They also told blacks where they could live. Black South Africans had to carry identification passports at all times.

Segregated: set apart



- 4 The ANC protested these laws by calling for strikes. South Africa needed the labor of its black citizens, and ANC leaders hoped that by refusing to work, blacks could force a change in the laws. The government, however, forcefully stopped the protests. Black organizations, including the ANC, were not allowed. Future protests were banned and future protest were prohibited. When Mandela continued to organize protests, he was arrested, convicted of treason, and sentenced to life in prison.

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Treason: to betray one's country to an enemy

-
25. Read this dictionary entry for the word strike.

strike \ strĭk\ *n* **1.** a stoppage of work or other activities to protest something **2.** a pitched ball that is thrown perfectly **3.** a military attack

Which definition shows the meaning of strikes as used in paragraph 4?

- A.** Definition 1
- B.** Definition 2
- C.** Definition 3
-
- 5 In prison Mandela continued the fight. As more people learned about apartheid, the South African government faced increasing protests. The South African government offered to release Mandela if he agreed not to organize protests, but Mandela refused. Opposition continued to grow until 1989, when South African president F. W. de Klerk revoked the harsh laws and began to end apartheid. He also gave political prisoners, including Mandela, their unconditional release.

GO ON 

- 6 Just seconds from freedom, Mandela's thoughts were crowded with memories of his long struggle. To honor the wisdom of age and experience, his people had a saying: "I have crossed famous rivers." Mandela's spirit grew as he crossed into freedom and thrust his fist upward. The roar of the crowd was deafening.



Nelson Mandela looks out the window from his cell at Victor Verster Prison in South Africa.

Photograph courtesy of © David Turnley/CORBIS. Photograph

- 7 Nelson Mandela's release was an important event that marked the end of the apartheid in South Africa. Mandela was elected president of South Africa four years later.

26. What can the reader infer from the actions of South Africa's white minority?

F. They were members of the ANC and other organizations formed to help black South Africans.

G. They feared they would lose power if blacks were allowed to vote.

H. Most of them were against South Africa's policy of apartheid.

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This story is about tests that scientists are conducting to see if they can create a robot that can perform activities similar to a normal teenager. Now read about normal teen-aged boy who plays video games against a robot. Then answer the questions that follow.

The Best

1 "O.K., that's enough," Dr. Clifford said, writing in his notebook. Chris slowly walked away from the game station. He wondered what could have gone wrong. He had played this video game thousands of times. He was supposed to be the best. So why couldn't he win?

2 All around him the scientists at Harris Laboratories checked data and made changes. For more than five years they had been working on building a robot that could do everything a human teenager could do, only better. Now they thought they had done it. Chris looked across the room at his opponent—Sam, they called him. He wondered how something so clumsy and simple could keep beating him.

27. Why does Chris wonder what could have gone wrong in paragraph 1?

- A. Sam has just beat him at the game again.
- B. Dr. Clifford will not let him play the video game.
- C. Chris doesn't feel like playing the game anymore.

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28. Paragraph 2 is important to this story because it —

F. shows that Sam is clumsy and doesn't play very well

G. explains why Chris and Sam are playing the game

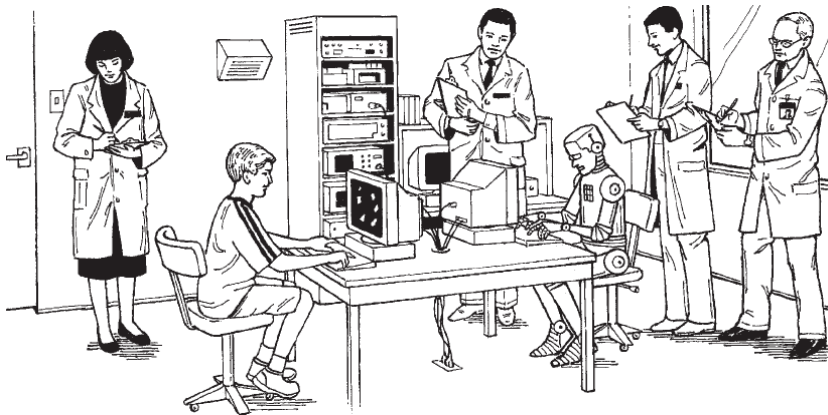
H. describes how to play the video game

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3 "Let's get ready for the next test," Dr. Clifford called. "Fifteen minutes."

4 Chris walked back over and sat down at the game station. Sam was already seated across from him.

5 "Good luck," Sam said. The words caught Chris's attention. Sam had never spoken to him before. "You're a good player, the best they've ever had for me here."



6 "But I'm supposed to win," Chris said. He had played the game for more than two years. He hadn't thought he could lose. It was still hard for him to believe what was happening. "Will you answer a question?" Chris asked.

7 "What is it?" Sam replied.

GO ON 

- 8 "How do you do it?" Chris asked. Sam stared back with a puzzled look. "How can you play the game as quickly as you do?" Chris asked.
- 9 Sam thought about the questions a long time before answering. "I'm not sure," he finally answered. "But I've played this game thousands of times. I seem to know what the game will do before it happens."
- 10 "That's impossible," Chris said. He knew the game had millions of possible moves and that each one was picked at random. "There's no way you could have memorized the game program. There are too many possibilities even for a computer to figure out."

29. Why does Chris think it is impossible for Sam to memorize the game combinations?

- A.** He doesn't think Sam has a very good memory.
- B.** Sam hasn't had time to learn all the combinations.
- C.** There are too many combinations to remember.

- 11 "It's not exactly memory the way you think of it," Sam said. "It's something else. It's hard. You wouldn't understand."
- 12 "Thirty seconds," Dr. Clifford called. Workers and scientists rushed to get ready for the next game. "Twenty seconds," Dr. Clifford called, beginning a countdown.
- 13 "How could I not understand?" Chris thought. He gripped the controls of the game. This time he would prove that he was better. Dr. Clifford told them to start the final game. The players had to destroy make-believe meteors before the huge

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rocks hit their ships. Chris reacted quickly as the game got faster. His point total climbed higher and higher.

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14 Chris looked across the game station. As usual, Sam was impassive. He held the controls and played calmly. Sam never showed any signs of nervousness or worry during the games. His eyes fixed straight ahead, he seemed to stare through the machine instead of at it.

30. In paragraph 14, what does impassive mean?

F. Without feeling

G. Terrified

H. Without skill

15 "Stop," Dr. Clifford called at last. The scientists checked the score, they checked the game, and they even checked both Chris and Sam. One of them handed a large clipboard of papers to Dr. Clifford. Dr. Clifford studied the papers for a long time, sometimes stopping to write something down on them. "Well, we're definitely making progress." "I'm very pleased with today's test results. I think we're through for now."

31. The most likely reason scientists check everything thoroughly after the game is that they want to —

A. guarantee that neither player was cheating.

B. make sure everything was working properly during the test.

C. find ways to make the task more challenging.

GO ON 

16 Chris saw his score. It was much higher than he had ever scored in the past. It was even higher than Sam had scored in the games they had played against each other earlier that day. He looked across the game station at Sam's score. Sam had won again. There had to be something wrong with the game. One of the scientists came over and faced Chris. "You gave him a good game," the scientist said. "We didn't expect you to come as close as you did."

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32. Which sentence from paragraph 16 supports the idea that Chris is improving his playing skill?

F. *It was much higher than he had ever scored in the past.*

G. He looked across the game station at Sam's score.

H. *There had to be something wrong with the game.*

33. Chris is confused after finishing the game with Sam because Chris —

A. played better than ever but still lost

B. can tell that Dr. Clifford is unhappy

C. doesn't want the testing to be finished



34. What can the reader conclude about the last game Chris and Sam play?

F. They both play better than ever before.

G. It is a different game than they usually play.

H. It takes much longer than their other games.

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17 "I'll never beat that boy," Chris said.

18 "You're the best CHRIS model we've ever built," the scientist replied. "You did better than any previous Custom Home Robotic Intelligence System, competing against the best player in the world."

35. Why are the scientists excited after Chris and Sam finish their game?

A. Chris has finally defeated Sam at the video game.

B. Chris has performed better than the scientists expected.

C. The scientists want to play the game now that the test is over.

19 "Yeah," Sam said, smiling from across the table. "And for a few seconds I thought you had me. I even broke my own record."

20 "But I'm built to win," Chris said. "I think faster. I move faster. My reactions are better. How could I lose?" He looked across at the human.



21 Sam shrugged his shoulders. "It's just a feeling I get. It's called intuition. Somehow I just know. I can figure out what's going to happen."

36. What does intuition mean in paragraph 21?

F. A memory of something from long ago

G. The ability to move very quickly

H. A sense or feeling about something

22 "You're right," Chris said. "I don't understand." There would be more testing the next day. "It's no use," the robot's computerized brain repeated. "I'll never beat that boy. He's the best."

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Use the whole story “The Best” on pages 22 to 28 to answer questions 37 and 38.

- 37.** Which sentence from this story supports the idea that Chris is tested on things besides video games?
- A.** *All around him the scientists at Harris Laboratories checked data and made changes.*
- B.** *For more than five years they had been working on building a robot that could do everything a human teenager could do, only better.*
- C.** *One of them handed a large clipboard of papers to Dr. Clifford.*
- 38.** Why did the scientists want to test Chris against Sam?
- F.** To illustrate how well the video game works when it is played by a human player and a robot
- G.** To prove that robots like playing video games as much as human players
- H.** To determine whether a robot can defeat the best human player

