

I, Robot

Isaac Asimov

Teacher's Guide

Written By Matthew Jewell



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Synopsis

Introduction

An unnamed narrator is preparing a series of articles for Interplanetary Press on Dr. Susan Calvin, a famous robopsychologist. Unsatisfied with the official release of documents, s/he interviews Dr. Calvin on the "human interest" facet of her career. She begins her story with Robbie, an early robot manufactured and sold in 1996 as a nursemaid.

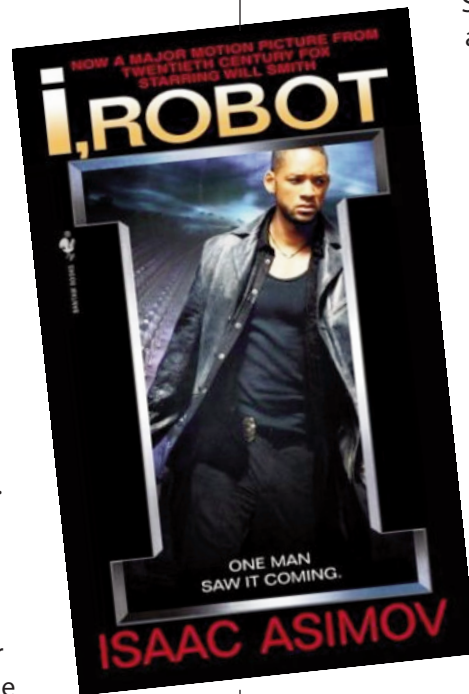
Chapter 1: Robbie

Though Gloria, her daughter, is attached to Robbie, Mrs. Weston insists that the robot be sent away from their home, summoning a variety of arguments. Eventually Mr. Weston agrees. Gloria is most distraught. After an unsuccessful trip to New York City to distract Gloria from her pining, Mr. Weston arranges for his daughter and the robot to be reunited at the U.S. Robots factory, much to Mrs. Weston's chagrin. In the present of the narrator, Dr. Calvin notes that Gloria eventually had to give up Robbie for good after most world governments outlawed the use of robots on Earth for all but scientific research. To forestall the resulting financial collapse, U.S. Robots developed the extraterrestrial market. Calvin begins relating the pivotal success of the Second Mercury Expedition of 2015.

Chapter 2: Runaround

Gregory Powell and Mike Donovan land on Mercury and are almost immediately confronted with a life-threatening crisis. They have sent Speedy, a robot, to fetch selenium from a pool on the planet's surface, but the robot has failed to return. Without the vital selenium, they will be unable to repair the installation's "photo-banks" and will die. They reactivate antiquated robots left over from the last expedition and pursue Speedy. They discover that Speedy is stuck in an infinite loop, wavering

between following the Second and Third Laws of Robotics. He approaches the pool because he has been ordered to, following the Second Law. As he nears it, he senses danger and retreats in accordance with the Third Law. Once he is out of danger, the Second Law forces him towards the pool again. After an initial unsuccessful attempt to break the loop, Powell leaves the safety of shadows and enters the full sunlight, in which he can only survive momentarily. Seeing a human in danger, the First Law of Robotics overrides Speedy's equilibrium. He rescues Powell and then retrieves the necessary selenium from a safer source.



Chapter 3: Reason

Six months later, Powell and Donovan are aboard a solar power space station. They have assembled Cutie, a new model of robot, and are evaluating his ability to operate the station unsupervised by humans. Cutie is somewhat of a skeptic, refusing to believe that he was made by humans, that the points of light out the windows are huge balls of gas (stars), or that a place called Earth exists. He reasons that he was created by the "Master," the power converter, to replace humans. Donovan discovers Cutie leading the other robots in a religious ceremony

worshipping an "L-tube," a component of the power converter, and enrages them by spitting on it. Donovan and Powell are restricted to their quarters. As an electron storm approaches the station, the scheduled beamed transmission of the collected solar energy arrives. Donovan and Powell desperately argue with Cutie for their release, fearing that Cutie will be unable to keep the beam focused, thereby potentially incinerating a large swath of Earth. However, Cutie maintains the beam's focus beyond human ability, though he does so as part of his service to the Master, rather than from any concern for a planet in which he doesn't believe. Donovan and Powell conclude that Cutie is indeed able to run the station better than a human. When they are relieved by an arriving ship, they neglect to tell their

replacement human of the strange circumstances on the station.

Chapter 5: Catch that Rabbit

Powell and Donovan are assigned to an asteroid to test a new multiple robot, Dave. Six subsidiary robots are slaved to Dave, his “fingers.” Tasked to mining, Dave and the fingers operate fine when supervised by humans, but inexplicably produce little to no ore when left alone. Dave is unable to explain the phenomenon. Watching remotely, Donovan and Powell spot Dave marching his subsidiary robots in odd dances resembling military drills. Donovan is convinced that something “sinister” is going on, while Powell resolutely insists that there is a logical explanation. Unable to determine the cause of Dave’s malfunctions on their own, they enter the mine tunnels to create an emergency, hoping to force Dave into malfunctioning so that they can observe the process. Unfortunately, their detonator blast traps them in a tunnel, though it does incite another one of Dave’s episodes. As they watch the process, Powell is struck with a sudden intuition and shoots one of Dave’s subsidiary robots. Dave returns to normal immediately and rescues the trapped men. Powell explains to Donovan that the malfunctions were rooted in the six-way signals and that destroying one of the six “fingers” resolved the problem.

In the present of the narrative, the interviewer asks Calvin if *she* ever had a robot malfunction on her. She blushes, appears reluctant to divulge the story, but then begins to narrate the tale of Herbie, manufactured in 2021.

Chapter 6: Liar!

Through an unknown accident in the manufacturing process, Herbie possesses the ability to read human minds. Dr. Calvin meets with her peers, Alfred Lanning, Peter Bogart, and Milton Ashe, to try to understand how Herbie was created and the peculiarities of his abilities. In individual meetings, Herbie tells Calvin that Ashe, to whom she is secretly attracted, loves her and informs Bogart that Lanning is retiring and that he will be the next Director. After these claims are revealed to be false, much to the characters’ collective chagrin, they confront Herbie, who is unable to explain his behavior. Calvin realizes that Herbie is caught in an insoluble dilemma. He must tell humans what they most want to hear because to do otherwise would cause them emotional harm in violation of the First Law. However, telling lies will eventually also cause harm. She confronts Herbie with this paradox, driving him insane.

Chapter 7: Little Lost Robot

Calvin and Bogart are sent to the 27th Asteroidal Grouping to investigate the loss of Nestor 10, a robot with a modified imprint of the First Law. While the modified Nestors for use on the base are forbidden from harming a human, they lack the second part of the First Law, meaning that they can allow a human to come to harm through inaction. In a fit of pique, a scientist ordered Nestor 10 to “lose” himself. Following this instruction, the robot has hidden himself among a shipment of 62 other apparently identical Nestors, though the other robots all have full imprints of the First Law. After a number of unsuccessful attempts to discern the modified Nestor from the other robots, Calvin sets up an experiment. Keeping the robots separated, she informs each one that a human will be in danger and that a field of gamma radiation, deadly to the robots, will be between the Nestors and the human. In the test room, a weight is dropped towards her and shunted away at the last second. Only one robot leaps to save her, Nestor 10. Afterwards, Calvin explains that the room was actually filled with infrared radiation, harmless to robots, not a gamma field. Untrained in physics, the unmodified robots were unable to tell the difference and thus did not move to save her, while Nestor 10, who had received training in radiation in his work on the base, revealed himself.

Chapter 8: Escape!

When Calvin returns to Earth, she is called to a U.S. Robots staff meeting. Consolidated, a competing robotics company has made a peculiar offer to U.S. Robots. They are offering to pay U.S. Robots to run a set of calculations related to the development of interstellar travel through The Brain, their central computer. Rumor has it that the same calculations destroyed Consolidated’s central computer and that they want to similarly destroy U.S. Robot’s to avoid falling behind in the race to develop an interstellar drive. The scientists assume that the solution to the calculations involves harm to a human being, posing a dilemma that short-circuited Consolidated’s computer. They decide to accept the offer and feed the information to The Brain in small batches with explicit instructions to reject any data that involves harm to a human being.

To their surprise, The Brain claims to have easily solved the calculations and offers to build them a spaceship. Powell and Donovan are called in to test the ship and experience strange hallucinations during the jumps between points. Meanwhile on Earth, The Brain begins

behaving oddly. As the ship returns to Earth, Calvin realizes that during the interstellar jump both humans and ship cease to exist for a moment, but emerge on the other end exactly as they began. The Brain's odd behavior was the result of his trying to cope with the dilemma of doing momentary harm to humans; he developed a sense of humor.

Chapter 9: Evidence

The interview proceeds from the development of interstellar travel to Calvin's memories of Stephen Byerley, a prominent politician.

Francis Quinn, a politician, summons Lanning to his office. He claims that his investigators have discovered that Stephen Byerley, a lawyer running for mayor, apparently never eats nor sleeps. He speculates that Byerley is a robot and intimates that Lanning should investigate the matter to ensure that U.S. Robots receives no negative publicity. Lanning and Calvin meet with Byerley. Calvin opines that there is no definite way to prove that Byerley *is* a robot. It is only possible to prove that he *is not* a robot, which can be accomplished by his breaking one of the Laws of Robotics in public.

After unsuccessful attempts to prove him an android, Byerley arrives in public for a speech. A dissident pushes to the front and demands that Byerley strike him, since robots can't harm humans. Byerley hits the man, ostensibly settling the matter for good. After the election, which he wins, Calvin meets with him. She suggests that the man whom he struck was a robot constructed specifically for that purpose. However, she is unfazed by the prospect of Byerley's being a robot, since she generally prefers robots to people.

The interviewer is horrified. Calvin assures him that there is no conclusive way to prove that Byerley was, in fact, a robot, since he had his remains atomized after his "death." She then continues the story, explaining how she realized that the "Machines" were in control of the entire world.

Chapter 10: The Evitable Conflict

Dr. Calvin meets with Stephen Byerley in his office as World Co-ordinator. He is concerned by recent aberrations in the world economy, small fluctuations that shouldn't be possible, unless the "Machines" are making errors or intentionally trying to disrupt the world's economy. He explains his meetings with the four Regional Co-ordinators, each of which revealed various apparent miscalculations. After the problem is presented in full,

Calvin considers the information and arrives at a surprising conclusion. She reasons that the small errors were introduced by the Machines to remove from power members of the "Society for Humanity," opponents to the use of robots. She claims that the Machines are acting in the best interest of humanity and that the small economic aberrations are the results of their subtle campaign to continue advancing the general prosperity of the race.

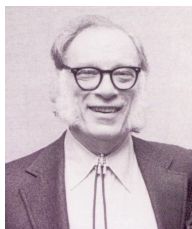
In a short epilogue, the interviewer concludes the novel and notes that Calvin died the previous month at 82.

Timeline

- 1982** Susan Calvin born.
- 1996** Robbie manufactured and sold to the Westons.
- 1998** Robbie returns to the Westons.
- 2002** Calvin attends the Psycho-Math seminar where Alfred Lanning demonstrates the first mobile talking robot.
- 2003** Calvin earns a B.S. in Cybernetics at Columbia.
- 2003-2007** Most world governments ban the use of robots on Earth for any use but scientific research.
- 2007** U.S. Robots hits financial low point.
- 2008** Calvin obtains a Ph.D. and joins U.S. Robots as a "robotpsychologist."
- 2015** Powell and Donovan lead the Second Mercury Expedition. Powell and Donovan reassigned to a space station.
- 2016** Powell and Donovan assigned to an asteroid to test Dave.
- 2021** Herbie, a mind-reading robot, is inexplicably produced.
- 2025** Narrator is born.
- 2029** Calvin and Peter Bogart are sent to the 27th Asteroidal Grouping to locate the missing Nestor 10.
- 2030** The Brain develops a hyperspace drive.
- 2032** Stephen Byerley wins the mayoral election.
- 2037** Byerley becomes Regional Co-ordinator.
- 2044** The Regions of earth unite in the Federation. Byerley becomes the first World Co-ordinator.

2052

Calvin meets with Byerley, who is completing his second term as World Co-ordinator, and realizes that the Machines control the fate of humans.



2057

The narrator interviews Calvin.

2064

Calvin dies. The last chapter is written/published.

Author Sketch

Isaac Asimov was born into an Orthodox Jewish family near Smolensk in the former Soviet Union, sometime between late 1919 and early 1920—the date is uncertain due to calendar changes and lack of records. (Asimov himself gave his date of birth for official purposes as January 2, 1920.) He moved to Brooklyn, New York, with his family when he was three and was naturalized in 1928. Something of a child prodigy, he taught himself to read when he was five. He began to write when he was eleven and had sold his first story by age eighteen. He entered Columbia University in 1939, and eventually earned a Ph.D. in chemistry from Columbia in 1948, after a three-year stint during World War II at the Philadelphia Navy Yard's Naval Air Experimental Station, and nine months in the U.S. Army, from which he received an honorable discharge (and narrowly escaped participating in the 1946 Bikini Atoll atomic bomb tests). He taught at Boston University from 1949 to 1958 and was associated with the university for the rest of his life, although in a non-teaching capacity after 1958, when he turned to writing full-time.

A vastly prolific author, Asimov wrote over 1,600 essays and 450 books. Penning at least one book in all 10 major Dewey Decimal library classification, his writings span such diverse categories as children's literature, religion, literary criticism, astronomy, biology, physics, humor, fiction, and autobiography. Best known for his science fiction, Asimov won every major science fiction award, including seven Hugos and two Nebulas. The Science Fiction Writers Association named him a Grand Master in 1986, and he was inducted into the Science Fiction and Fantasy Hall of Fame in 1997, five years after his death in 1992.

Critic's Corner

Generally considered to be one of the "big three" of science fiction authors, along with Robert Heinlein and

Arthur C. Clarke, Isaac Asimov displays several of the characteristics upon which his stellar reputation is based in *I, Robot*. His apparent prescience in predicting technological advances is primarily a function of his scientific training. While the robots in the novel are pure speculation, they are speculations based upon a firm scientific background. It is this fidelity to scientific accuracy that is often most prized in his fiction. However, on a purely literary basis, *I, Robot* is somewhat lacking. The characterization is sketchy at best, completely flat at worst. While Susan Calvin approaches being a complete character, figures like Alfred Lanning are merely stick figures with occasional lines. The frame narrative is also unconvincing. The chapters were originally written as short stories, and they still read as discreet units, rather than as integral pieces of an overarching narrative. Perhaps more adept at science than fiction, Asimov, nevertheless, is one of the great figures in science fiction.

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Asimov, Janet J. *Notes for a Memoir: On Isaac Asimov, Life, and Writing*. Amherst: Prometheus, 2006.

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Selected Other Works

Fiction

Pebble in the Sky, 1950
Foundation, 1951
The Stars Like Dust, 1951
The Currents of Space, 1952
Foundation an Empire, 1952
Second Foundation, 1953
The Caves of Steel, 1954
The Naked Sun, 1956
The Rest of the Robots, 1964
The Gods Themselves, 1972
Foundation's Edge, 1982
The Robots of Dawn, 1983
Foundation and Earth, 1986
Robot Dreams, 1986
Prelude to Foundation, 1988

Nonfiction

The Roman Republic, 1966
The Egyptians, 1967
Asimov's Guide to The Bible, 1968
The Dark Ages, 1968
The Shaping of England, 1969
Asimov's Guide to Shakespeare, 1970
Asimov's Guide to Science, 1972
Asimov on Astronomy, 1974
Asimov on Chemistry, 1974
Lecherous Limericks, 1975
Asimov on Physics, 1976
Asimov on Numbers, 1977
Asimov on the Bible, 1978
Asimov on Science, 1989
Asimov's Guide to Hally's Comet, 1985
Asimov Laughs Again, 1992

MEDIA VERSIONS

Audiobook

I, Robot, Random House, 2004, unabridged

DVD/VHS

I, Robot, 20th Century Fox, 2004

Objectives

General Objectives

1. To read a full-length novel.
2. To develop critical reading, writing, and thinking skills.
3. To expand vocabulary.
4. To identify, track, and discuss significant themes.

5. To evaluate science fiction as a literary genre.
6. To understand and use central literary terms and concepts.
7. To comment on how structure affects content.
8. To decipher complex chains of reasoning.
9. To foster an appreciation for literature.
10. To prepare for standardized testing.

Specific Objectives

1. To evaluate gender roles and stereotypes in the novel.
2. To analyze the novel's structure.
3. To compare the Laws of Robotics to human ethics.
4. To solve the logic puzzle of each chapter.
5. To characterize Susan Calvin.
6. To compare the evolution of robots to historical human developments.
7. To comment on the reliability of the narrator.
8. To discuss Asimov's understanding of human history.
9. To write fiction in response to the novel.
10. To draw parallels between contemporary world events and the novel.

Literary Terms and Applications

Characterization: the assembly of actions, speech patterns, attitudes, and habits that defines a character. Most of the characters in *I, Robot* are flat characters, two-dimensional and easily predictable. Susan Calvin is the most thoroughly developed character.

Frame Narrative: a structure nesting one narrative within another. The novel is comprised of stories within the greater frame of interviews with Dr. Calvin.

Narrator: the voice of the person telling the story in a work of fiction. The narrator in *I, Robot* is an unnamed journalist for *Interplanetary Press*. This narrator is the ostensible author of the stories, which are, in the context of the frame narrative, a series of articles.

Cross-Curricular Sources

Films

2001: A Space Odyssey, Warner Home Video, 1968
Alien, 20th Century Fox, 1979
Brazil, Criterion, 1985
Bladerunner, Warner Home Video, 1992
Dune, Universal, 1984
Gattaca, Sony, 1997
The Matrix, Warner Home Video, 1999
Minority Report, Dreamworks, 2002

FICTION

Ray Bradbury, *The Martian Chronicles*
Anthony Burgess, *A Clockwork Orange*
Orson Scott Card, *Ender's Game*
Arthur C. Clarke, *2001: A Space Odyssey*
Michael Crichton, *Jurassic Park*
Phillip K. Dick, *Do Androids Dream of Electric Sheep?*
Philip Jose Farmer, *To Your Scattered Bodies Go*
David Gerrold, *When H.A.R.L.I.E. was One*
William Gibson, *Neuromancer*
Robert A. Heinlein, *Stranger in a Strange Land*
Frank Herbert, *Dune*
Daniel Keyes, *Flowers for Algernon*
Stanislaw Lem, *Solaris*
Madeleine L'Engle, *A Wrinkle in Time*
Mary Shelly, *Frankenstein*
Mark Twain, *A Connecticut Yankee in King Arthur's Court*
Jules Verne, *20,000 Leagues under the Sea*
H.G. Wells, *The War of the Worlds*

Internet

Analog Magazine
<http://www.analogsf.com>

Asimov's Science Fiction
<http://www.asimovs.com/>

BBC "Timeline Real Robots"
http://news.bbc.co.uk/2/hi/in_depth/sci_tech/2001/artificial_intelligence/1531432.stm

Popular Science
<http://www.popsci.com/popsci/>

"Science Fiction Stories with Good Astronomy and Physics"
<http://www.astrosociety.org/education/resources/scifi.html>

"Teaching Science Fiction"
<http://www2.ku.edu/~sfcenter/teaching.htm>

Themes and Motifs

Themes

- logic
- ethics
- robotics
- physics
- psychology
- religion

- politics
- economics
- progress

Motifs

- anthropomorphization of robots
- parallels between developments in human history and the evolution of robots
- solving dilemmas using inductive and deductive reasoning
- situational explorations of the Three Laws of Robotics
- reactionary resistance to the use of robots

Meaning Study

1. George Weston, after all, was only a man—poor thing—and his wife made full use of every device which a clumsier and more scrupulous sex has learned, with reason and futility, to fear. (p. 11)
(The narrator is discussing Mrs. Weston's "campaign" to have Robbie ejected from their home. Whether this opinion of women belongs to Asimov, the narrator, or both is not immediately clear. The "clumsier and more scrupulous sex" refers to men. The quote implies that women are adroit and underhanded in their attempts to get what they want. It is interesting to note that Dr. Calvin stands in direct contrast to this characterization of women.)
2. I began at the one sure assumption I felt permitted to make. I, myself, exist, because I think. (p. 61-62)
(Cutie is describing his process of reasoning to Donovan and Powell. He begins with Descartes' famous first principle: cogito ergo sum (I think, therefore I am). The irony of the scene is that Cutie arrives at a completely skewed understanding of his own existence from this first principle. He refuses to believe that humans created him or that stars exist. This scene is partly a commentary on the validity of a priori reasoning. Asimov, trained as a scientist, elevates the importance of empirical knowledge.)
3. There is no Master but the Master and QT-1 is his prophet. (p. 66)
(Donovan discovers the robots of the solar space station worshipping the "Master" and chanting the above quote, which is a paraphrase of an Islamic tenet: "There is no God but

God and Muhammad is his prophet." In the context of the story, Cutie's mysticism is portrayed as a product of his faulty reasoning and lack of empirical knowledge. By extension, religion in general is depicted as the product of a flawed and incomplete understanding of the universe.)

4. Do you suppose that if asked a question, it wouldn't give exactly that answer that one wants to hear? Wouldn't any other answer hurt us, and wouldn't Herbie know that? (p. 131) *(Dr. Calvin is explaining the paradox with which she drives Herbie insane. Because he can read minds, he knows what reply will best please humans. Giving a different response would cause emotional injury to the human, so he is required by the First Law to give the expected answer. However, lying to humans will also cause emotional injury once it is discovered. For Herbie, there is no possible resolution to this dilemma.)*
5. I had put them into shape according to my own lights, dramatized the bare bones of her recital, added the conversation and little touches. (p. 136) *(The narrator gives a brief account of how the stories have been created. Using his notes from the interviews with Dr. Calvin, he dramatizes them into full narratives. The central dilemma this admission introduces to the novel, i.e., the veracity of the accounts, is not addressed in depth. Although the narration is, to a degree, unreliable, the stories themselves are presented as truth. However, it is interesting to note the extent to which the historical accuracy of the account may be altered. Dr. Calvin recalls events from memory. The narrator takes notes of her interview, then dramatizes them into stories. At each step of the process, one assumes that something must be lost or altered.)*
6. If a modified robot were to drop a heavy weight upon a human being, he would not be breaking the First Law, if he did so with the knowledge that his strength and reaction speed would be sufficient to snatch the weight away before it struck. (p. 153) *(Dr. Calvin is explaining why the First Law must not be altered in any way. The modified Nestors lack the second half of the First Law. They may not harm a human directly, but they may allow*

a human to come to harm through inaction. She argues that a robot could drop a weight on a human, knowing that it could save him or her, then change its mind and allow the human to come to harm. The core of her argument is intention. If the robot did not originally intend for the weight to hit the human, then the damage would be done by gravity and the weight of the object, not by the robot itself.)

7. The change from nations to Regions, which has stabilized our economy and brought about what amounts to a Golden Age, when this century is compared with the last, was also brought about by our robots. (p. 206-207) *(Dr. Calvin provides a short political history of Earth. After the last world war, presumably World War III, nations were eventually reorganized into Regions and then incorporated into a world government, which brings about a "Golden Age" with economic prosperity and global peace. This portrait of the world is essentially utopian and is typical of post World War II thought, which often assumed that only a global government would be able to ensure world peace. The "robots" to which she refers are the "Machines" and possibly Stephen Byerley.)*
8. you just can't differentiate between a robot and the very best of humans. (p. 223) *(Dr. Calvin is explaining that it is impossible to prove that Stephen Byerley is a robot by his actions, only that he is not a robot. If he violates one of the Laws, then he must not be a robot, but his following the laws proves nothing, since he may just be a very good person. Her assertion revolves around the ethical grounding of the Three Laws of Robotics, which she claims are based in human ethics. The one exception, which she does not mention, is the Second Law, which directs robots to follow human orders. One assumes that a slavish mentality is not a prerequisite for human goodness.)*
9. They would be against mathematics or against the act of writing if they had lived at the appropriate time. (p. 265) *(Hiram Mackenzie, the coordinator of the Northern Region is explaining the resistance to the Machines by the Society for Humanity. He claims that they are reactionary luddites, opposed to progress of any sort. In this conver-*

sation, one hears Asimov the scientist scoffing at his own contemporary reactionaries. The belief in the benefits of development is at the core of the novel.)

10. It was always at the mercy of economic and sociological forces it did not understand—at the whims of climate, and the fortunes of war. (p. 272)
(Dr. Calvin is explaining that the Machines are, in fact, in complete control of humanity's future. She is unperturbed by the revelation, claiming that humanity was never in complete control of its fate, that forces too complex to understand always guided human development. The Machines, now evolved to a complexity beyond the comprehension of roboticists, have merely replaced the other forces. She prefers the robots, however, because they have the best interests of humanity programmed into them at a basic level.)

Comprehension Study

1. What are the three Laws of Robotics?
(The First Law states that a robot may not harm a human being, nor allow a human to come to harm through inaction. The Second Law compels a robot to obey a human's command, unless the command directly or indirectly breaks the First Law. The Third Law commands a robot to preserve its own existence, as long as doing so does not violate the First or Second Laws.)
2. Characterize Dr. Susan Calvin.
(Aside from the brief flare of emotion in "Liar!", Calvin is portrayed as cold, humorless, and highly intelligent. She gives "frosty" smiles and issues ultimatums to her peers. She contrasts with the novel's other adult female, Mrs. Weston. While Mrs. Weston is portrayed as 1) representative of females generally and 2) deviant, Calvin is straightforward and presumably an exception. Her fierce intelligence is most evident in that she is the character who solves the relevant logic puzzle in the chapters in which she appears.)
3. Analyze the novel's structure.
(The novel is a set of short stories linked together with a frame narrative that links them together and explains their existence as articles written for Interplanetary Press. Each story cen-
- ters around a logic puzzle that the characters eventually solve. Over the course of the novel, the stories unfold the history of robotics in the fictional world and investigate the intricacies of the Laws of Robotics.)
4. What gender are the robots and why?
(The robots are universally male. Why is an open question, but several obvious options present themselves. First, the robots perform tasks that would be traditionally masculine at the time of the novel's writing with the exception of Robbie. Also, the scientists who create and name the robots are male. Dr. Calvin, though an employee of U.S. Robots, deals with robots after they are manufactured, not before.)
5. Is Stephen Byerley a robot?
(Whether Stephen Byerley is or is not a robot is never made explicit, but textual evidence seems to indicate that he is. His evasion of the question is perhaps the most telling evidence. He never denies being a robot. He simply refuses to provide a clear answer to the question and allows events to speak for themselves. To Calvin's theory that the man he struck in public was a robot, he replies that he must reply that the idea is farfetched. This statement would be literally true if he were a robot, since to allow it to be known that he was a robot would break the First Law by causing harm to humans.)
6. How are the Laws of Robotics related to human ethics?
(The First Law is grounded in many human ethical codes. It echoes the Hippocratic Oath's "Do no harm," Christianity's admonition to "do unto others as you would have them do unto you," and maxims in other prominent codes of conduct. Although the Third Law is similar to religious ideals forbidding suicide, it is also inherent in human nature. Self-preservation is a basic instinct. The Second Law also seems to have its roots in various religious codes, including biblical ones, that command obedience to those who are legitimately in authority, unless to do so would be to contravene divine law.)
7. Describe the novel's depiction of human history.
(Asimov's understanding of human history is decidedly jaundiced. He portrays the majority of human history as a process of blindly reeling

from one war or disaster to the next. He casually mentions that Calvin was born after the last World War in the 1980s, Stephen Byerley explains human history as a continual power struggle, and Calvin suggests that humans have always been at the mercy of forces that they could not comprehend. Robots in the form of the Machines eventually remedy humanity's inherent desire to destroy itself. That it requires external agency to bring about the "Golden Age" is a reflection of the post-war cynicism prevalent at the time of the novel's writing.)

8. How does the novel humanize the robots?
(I, Robot humanizes the robots by assigning them human-like emotions, motives, actions, and appearances. Perhaps the most obvious anthropomorphization is the bipedal humanoid form most of the robots appear in. The descriptions also implicitly humanize the robots by giving simple descriptions emotional tones, using words like "forlorn" or "slyly." Over the course of the novel, the robots acquire more human features, evolving from the speechless Robbie to Stephen Byerley, who, if a robot, is indistinguishable from a natural human.)

9. Is this a utopian novel?
(While the "Golden Age" described by Calvin does indeed appear utopian, the novel itself is concerned more with the development and rise of robotics than with the final consequences. This is a matter of focus. The novel is not a utopian work simply because it does not dwell in detail on the eventual utopia created by the management of the Machines. In fact, the final utopia does not actually occur within the limits of the novel. Rather, it is recognized as eventually coming as a result of the Machines' meticulous planning.)

10. Compare real world advances in and uses of robotics to events in the novel.
(The human dependence on computers for maintenance of systems too complex to monitor like power grids and weather is perhaps the most acute correspondence between the novel and the world. Another correspondence is the use of robots in industry. While the robots in automotive factories are neither humanoid nor intelligent, they have replaced humans on the assembly line and were met with opposition by

labor groups. The other main similarity is the use of robots in space. Robots are particularly well-suited to the extreme conditions of outer space. The exploration satellites and robots used to document the planets and asteroids of the solar system are less independent than the robots of the novel, but their uses are essentially the same: to perform tasks too time-consuming or risky for humans.)

How Language Works

1. The anthropomorphization of robots begins in the first chapter with Robbie: "But Robbie was hurt by the unjust accusation, so he seated himself carefully and shook his head ponderously from side to side." (p. 4) This display of emotion could be explained as part of his programming as a nursemaid, but Calvin has earlier noted that he was made before the age of extreme specialization.

2. Of the early robots, Powell remarks, "they built good, healthy slave complexes into the damned machines." (p.35) That the robots are "damned" and that the slave complex is "good" and "healthy" reveals Powell's estimation of the place of robots in relation to human beings. His understanding of robots is in direct contrast to Susan Calvin's.

3. Cutie refuses to believe that he was made by humans based on the principle that "no being can create another being superior to itself." (p. 63) This tension between robots and humans continues throughout the novel, culminating in the eventually rise of the Machines. It is interesting to note that logic would support Cutie's principle but that the plot contradicts it.

4. Asimov foreshadows Herbie's duplicity: "Herbie turned slowly to his neglected novel, but there was no one to read his thoughts." (p. 119) That Asimov explicitly mentions the opacity of Herbie's mind indicates that something of interest is happening in it. It also highlights the robot's essential strangeness, his difference from the humans around him.

5. Susan Calvin's opinion of robots is somewhat higher than her estimation of humans. When asked if the two were different, she replies,

“Worlds different. Robots are essentially decent.” (p. 216)

6. Stephen Byerley never admits to being a robot. When Calvin notes that the man she struck in public might simply have been another robot, he replies, “I must reply that that is a somewhat farfetched idea.” (p. 238). The phrasing of his response hints that he is a robot. That he “must” reply in such a manner could be interpreted as an extension of the First Law. Public knowledge of his being a robot would cause various types of harm to humans, so he is under compulsion to evade the question.

Across the Curriculum

Drama

1. As a group, brainstorm on how to dramatize the novel. Would the frame narrative be done in voiceovers? Would each chapter constitute a scene? Which parts would be dropped for brevity?
2. Gathering details from the novel, script and act out a confrontation between Donovan and Cutie.

Art

1. Using a computer design program, create a dust jacket for the novel. Include cover imagery, title, author, tagline, and back-cover synopsis.
2. Sketch a storyboard for what you consider to be the most important moment in the novel. Include key characters, objects, dialogue, and setting. Present your storyboard in class and discuss your choices.
3. Create a visual timeline for the development of robots in the novel, including important robots, inventions, moments, and scenes.
4. Draw portraits of the main characters. Explain your artistic decisions with references to the novel. Try to differentiate your imagination from memories of external sources like book covers and movies.

Gender Studies

1. Find and analyze Asimov’s comments and asides about gender, which are fairly numerous in

the novel. How does Asimov view gender? Is his view different from yours? How and why?

2. Analyze each character in relation to gender stereotypes. Are they portrayed as stereotypically masculine or feminine. Do any of the characters act in a manner not commonly associated with their biological gender?

Social Studies

1. One of the main objections to the use of robotic labor is that it will take jobs away from humans. Research and make an oral report on the use of real life robotics in heavy industry and objections from labor groups.
2. Using information from the book, make a map of the Earth displaying the four Regions: Tropic, Northern, Eastern, and European.

Film/Video

1. Watch the film version of *I, Robot* (20th Century Fox, 2004). Discuss the film’s relation to the text. What events, themes, characters, scenes, and settings are retained? Which are omitted?
2. Watch *2001: A Space Odyssey* (Warner Home Video, 1968) and compare Hal to the robots in *I, Robot*. Also evaluate the film’s use of science, depiction of space travel, relationship between humans and robots, and main themes.

Journalism

1. Rewrite one of the chapters as if it were a news story.
2. Write a review of *I, Robot*. Include a short synopsis, brief author biography, comments on the book’s influence, and a judgment of its literary merit.

Language

1. Analyze and list the novel’s major stylistic characteristics. Include sentence structure and length, word choice, point of view, structure, and authorial insertions.
2. Choose a section from the novel approximately 500 words long and replace every verb with a synonym. Discuss how the changes affect the content.

3. Choose a significant paragraph and rewrite it in your own words. Discuss how your writing style differs from Asimov's. What is lost in the conversion? What is gained?
4. Make a robotics glossary based on Asimov's usage and neologisms. Include full entries for each word, including pronunciation, definition, synonyms, antonyms, derivation, and sample sentences.

Composition

1. Rewrite one of the chapters from the perspective of one of the characters in the first person. For example, have Donovan narrate his experiences on the Second Mercury Expedition as if he were recalling it from memory.
2. Compose a series of journal entries from the perspective of a robot. Take into account the robot's training, experiences, and immediate circumstances.
3. Each chapter is essentially a dramatization of an interview with Susan Calvin. Choose a chapter and compose the original transcript of the interview upon which the chapter is based.
4. Choose your favorite character from the novel and compose a short story, scene, poem, or journal entry from their perspective.

Literature

1. Research, prepare, and present an oral report on the development of science fiction as a literary genre.
2. Choose ten literary terms, provide their definitions, and write a paragraph for each explaining how it related to the novel.
3. Choose what you consider to be the novel's most important line or paragraph and write an essay explaining its significance.
4. Choose what you consider to be the novel's most interesting line or paragraph and write an essay explaining its significance.

Alternate Assessment

1. Read one of the novels from the list in the Cross-

Curricular Sources list. Discuss how the novel fits into the genre of science fiction, its literary merit, and its similarities to and differences from *I, Robot*.

2. Compose your own science fiction story. Include the use of real scientific principles.
3. Choose a literary short story and rewrite it to be set 200 years in the future. Consider likely scientific and technological advances and how they would affect the setting, characters, and action.
4. Make a website contrasting advances in robotics predicted in science fiction with real life uses of robots today.
5. Read Shakespeare's play *The Tempest* and write an essay comparing Ariel to the robots in *I, Robot*.

How Language Works

Vocabulary

1. Keep a vocabulary journal while you read the novel. Note and least five words in each Act that you do not know, look them up, write their definitions, and use each one in a sample sentence. Then add a list of synonyms and antonyms for each word.
2. Make a glossary, choosing twenty of these words:
 aberration
 abolition
 acute
 adulterated
 advent
 affable
 alacrity
 anomaly
 anticlimactic
 antiquated
 aplomb
 aqueous
 archaism
 ardent
 beatific
 blatant
 brusque
 cajole
 canter
 cipher
 circumlocution

clangor
coagulate
colloquial
concave
confidante
conscientious
consolation
copious
crescendo
decadent
derogatory
desiccated
dictate
dilapidated
discomfiture
disconsolate
disheveled
dissolution
elude
emigrate
emphatic
erratic
evitable
extraneous
fallible
florid
formidable
fortuitous
frigid
fruition
futile
gambol
genial
harrowing
hiatus
hoodwink
idiosyncrasy
imbued
imperious
imperturbable
implausible
impolitic
incandescent
inchoate
incipient
indoctrination
ingenious
ingratiating
ingratitude
injudicious
injunction
inquisitive

inscrutable
insoluble
insubordination
insubstantial
introspection
iota
irrefutable
laborious
laconic
lassitude
lavish
leer
libelous
lucid
macabre
monotony
mortify
muss
oblige
obstinate
ogle
ominous
optimal
ostentatious
owlishly
pantomime
paralytic
parsec
patronizing
peevish
peremptorily
perennial
perfunctory
pertinent
platitude
plausible
pompously
ponderously
postulate
precipitously
pre-eminence
pretentious
prevalent
prim
prodigal
prosaic
provincial
pulsating
qualitative
quantitative
rapt
rejoinder

repose
resilient
restive
revel
rueful
sardonic
sinecure
sluice
smug
somber
sonorous
squalor
stentorian
stimulus
strident
succinct
supplicate
tangible
unctuous
unutterable
vassal
vivacity
volatile

Grammar and Mechanics

1. There are seven ways to use a comma in the English language. Find and copy down an example of each usage from the novel.
2. Find examples of simple, complex, compound, and complex/compound sentences in the novel. Practice rewriting the sentences in different form. Break complex sentences into multiple simple sentences or combine simple sentences to form a compound sentence.

Critical Thinking

Using the following list of common analogy patterns, create a test of twenty analogies from the stories. Trade tests with a partner, take them, and then switch back to grade.

Action and Meaning (shiver : cold), Age (puppy : dog), Antonyms (large : small), Cause and Effect (explosive decompression : pulmonary embolism), Class and Member (rodent : rat), Defining Characteristic (genius : intelligence), Definition (visage : expression), Degree (angry : livid), Function (keyboard : typing), Group and Member (whale : pod), Location (sunset : west), Manner (laugh : snicker), Part and Whole (lens : glasses), Relation (father : son), Sex (bull : sow), Symbol and Symbolized (heart : love), Synonyms (happy : merry), Time Sequence

(incubate : hatch), Tool and Purpose (knife : cut), Worker and Work (engineer : build), Worker and Place (sailor : ship), Worker and Product (photographer : photograph), Worker and Tool (photographer : camera)

- ex: Dr. Calvin : Robopsychologist
- a) Dr. Lanning : U.S. Robots
 - b) Robbie : Gloria
 - c) Stephen Byerley : Politician
 - d) Francis Quinn : Mayor

The correct answer is c. Dr. Calvin is a robopsychologist, just as Stephen Byerley is a politician.

Writing

1. Compose an essay explaining the three Laws of Robotics. You should have an introductory paragraph with a thesis statement, a body with at least three main ideas and a topic sentence in each paragraph, and a conclusion. Use MLA citations for quotes from the novel and include a Works Cited page and an outline.
2. Outline an essay with three main ideas about Asimov's use of science in the novel and then reorganize the same material under different principles. For example, the same material could be organized as:
 - I. Psychology
 - II. Physics
 - III. Engineering

or

 - I. Plot uses of science
 - II. Thematic uses of science
 - III. Science in characterization.

Vocabulary Test

Circle the definition that *best* fits the word.

1. prosaic

- a) divided into equal units
- b) well written
- c) poorly written
- d) dull, everyday

2. platitude

- a) uncommon or unexpected discovery
- b) artificial foodstuff (archaic)
- c) assembly of disparate parts
- d) banal remark

3. aplomb

- a) girth
- b) complete confidence
- c) extreme dislike
- d) carelessness

4. tangible

- a) touchable, concrete
- b) attachable to a handle
- c) ludicrous, unbelievable
- d) reversible

5. lassitude

- a) viciousness
- b) lethargy
- c) width of an object
- d) length of an object

6. sinecure

- a) official statement of disapproval
- b) corner joint, usually in woodwork
- c) position that requires little work
- d) statement held to be unalterably true

7. circumlocution

- a) act of surrounding an object or person
- b) speaking around a subject
- c) revolution of a solar object
- d) type of logical proof

8. supplicate

- a) to ask humbly for something
- b) to perform an act of obeisance
- c) to perform an act of defiance
- d) to breath deeply and easily

9. hoodwink

- a) to strike

b) to feign interest

c) to accuse

d) to trick

10. restive

- a) lazy, sleepy
- b) impatient or balky
- c) forbidden
- d) eager to please

11. hiatus

- a) improbable solution to a problem
- b) reasonable solution to a problem
- c) break or gap
- d) difference or contrast

12. evitable

- a) avoidable
- b) revivable
- c) easy to comprehend
- d) nutritious

13. anomaly

- a) outer perimeter of a black hole
- b) false name
- c) deviation from the norm
- d) pretense

14. gambol

- a) make an absurd statement
- b) frolic
- c) lose a wager
- d) repair with ease

15. stentorian

- a) boring
- b) conceited
- c) important
- d) very loud

Comprehension Test A

Part I: Character Identification (30 points)

Name the character(s) who fits these descriptions.

- _____ 1. Mounts a political campaign against Stephen Byerley
- _____ 2. robot psychologist
- _____ 3. shoots one of DV-5's "fingers"
- _____ 4. hides in a shipment of identical robots
- _____ 5. nursemaid robot
- _____ 6. one-time object of Susan Calvin's affection
- _____ 7. breaks the talking robot at a museum
- _____ 8. mind-reader
- _____ 9. briefly believes that he will become the next director
- _____ 10. complains about his job frequently
- _____ 11. fetches selenium
- _____ 12. drives Herbie insane
- _____ 13. designs and builds a spaceship
- _____ 14. wins an election for mayor
- _____ 15. considers himself a prophet

Part II: Fact or Opinion (20 points)

Mark the following statements either T for true, F for false or O for opinion.

- _____ 1. Most of the robots in the novel are controlled by positronic brains.
- _____ 2. There are three laws that all robots must obey.
- _____ 3. Robots are superior to human beings.
- _____ 4. Mike Donovan designs, builds, and tests robots.
- _____ 5. Robots were eventually banned on Earth.
- _____ 6. Stephen Byerley was a robot.
- _____ 7. Francis Quinn campaigns to have robots banned on Earth.
- _____ 8. QT-1 successfully repairs the base on Mercury.
- _____ 9. Gloria goes to New York City in search of Dave.
- _____ 10. QT-1 refuses to believe that he was created by humans.

Part III: Chronology (20 points)

Place the listed events in the correct chronological order by matching letter to number.

- A. The Machines effectively control the Earth's economy.

- B. Powell and Donovan are assigned to a solar energy space station.
 - C. an anomaly in production results in RD-34.
 - D. work in the 27th Asteroidal Grouping is temporarily halted.
 - E. U.S. Robots develops mobile speaking robots.
 - F. The First Law of Robotics is modified on a limited edition of robots.
 - G. 2nd Mercury Expedition.
 - H. Susan Calvin gives a series of interviews for The Interplanetary Press
 - I. Powell and Donovan are assigned to test a spaceship.
 - J. Powell and Donovan are assigned to a mining asteroid
- _____ 1.
 - _____ 2.
 - _____ 3.
 - _____ 4.
 - _____ 5.
 - _____ 6.
 - _____ 7.
 - _____ 8.
 - _____ 9.
 - _____ 10.

Part IV: Essay Questions (30 points)

Choose two and answer in complete sentences.

- 1. Characterize Susan Calvin's opinion of robots.
- 2. Describe the structure of the novel.
- 3. Give a short history of robots according to the novel.
- 4. Is this novel utopian? Explain.
- 5. Contrast humans and robots.

Comprehension Test B

Part I: Identification (30 points)

Identify speakers of quotations.

- _____ 1. You have only to sit down to a meal at a restaurant in the presence of witnesses, have your picture taken, and eat.
- _____ 2. And then I tried something else. I actually asked the Machine.
- _____ 3. It's your fiction that interests me. Your studies of the interplay of human motives and emotions.
- _____ 4. First to get the cube of fourteen goes. Twenty-seven forty-four!
- _____ 5. I never saw Susan Calvin again. She died at the age of eighty-two.
- _____ 6. Our district attorney never eats!
- _____ 7. I saw the little girl in the museum.
- _____ 8. I don't remember. The day ended and ... there were the ore cars, mostly empty.
- _____ 9. Robots are essentially decent.
- _____ 10. The Master created humans first as the lowest type, easily formed.
- _____ 11. Suppose he's training them in military maneuvers.
- _____ 12. Hot dog, let's play games. You catch me and I catch you.
- _____ 13. I am not what you would call— attractive.
- _____ 14. I won't have my daughter entrusted to a machine.
- _____ 15. I'll build you a ship, just as easy— if you let me have the robots.

Part II: Short Answer (20 points)

Provide an answer to each of these questions:

- _____ 1. In what year was Robbie manufactured?
- _____ 2. What is the First Law of Robotics?
- _____ 3. What is the Second Law of Robotics?
- _____ 4. What is the Third Law of Robotics?
- _____ 5. Why does the Consolidated main computer self-destruct?
- _____ 6. How does Byerley disprove Quinn's accusations?
- _____ 7. Which philosopher does Cutie's reasoning reference?
- _____ 8. Why does Consolidated offer a contract to U.S. Robots?

- _____ 9. What is Robbie's favorite story?
- _____ 10. What group villainizes robots?

Part III: Fill-in (20 points)

Fill in the words that complete each statement.

- 1. Powell and Donovan eventually realize that _____'s malfunctions were a case of him " _____ his fingers."
- 2. _____ was eventually singled out from other identical robots on the ship because he had been trained in _____, while they had not been.
- 3. The Earth is governed in four main regions: Northern, _____, Eastern, and _____.
- 4. _____ dislikes _____ books, preferring fiction.
- 5. Powell and Donovan eventually knock _____ out of equilibrium by employing the _____ Law of Robotics.

Part IV: Essay Questions (30 points)

Choose two and answer in complete sentences.

- 1. Analyze Asimov's understanding of human history.
- 2. Contrast Gregory Powell with Mike Donovan.
- 3. How are the three Laws of Robotics related to human ethics?
- 4. Which scientific predictions made in the novel have come true?
- 5. Which scientific predictions made in the novel have not come true?

Answer Key

VOCABULARY TEST

1. D
2. D
3. B
4. A
5. B
6. C
7. B
8. A
9. D
10. B
11. C
12. A
13. C
14. B
15. D

COMPREHENSION TEST A

Part I: Character Identification (30 points)

1. Francis Quinn
2. Susan Calvin
3. Gregory Powell
4. Nestor 10
5. Robbie
6. Milton Ashe
7. Gloria
8. Herbie
9. Peter Bogart
10. Mike Donovan
11. Speedy
12. Susan Calvin
13. The Brain
14. Stephen Byerley
15. Cutie

Part II: Fact or Opinion (20 points)

1. T
2. T
3. O
4. F
5. T
6. O
7. F
8. F
9. F
10. T

Part III: Chronology (20 points)

1. E
2. G
3. B
4. J

5. C
6. F
7. D
8. I
9. A
10. H

Part IV: Essay Questions (30 points)

Answers will vary.

COMPREHENSION TEST B

Part I: Identification (30 points)

1. Alfred Lanning
2. Stephen Byerley
3. Herbie
4. Gregory Powell
5. the interviewer
6. Francis Quinn
7. Susan Calvin
8. Dave
9. Susan Calvin
10. Cutie
11. Mike Donovan
12. Speedy
13. Susan Calvin
14. Grace Weston
15. The Brain

Part II: Short Answer (20 points)

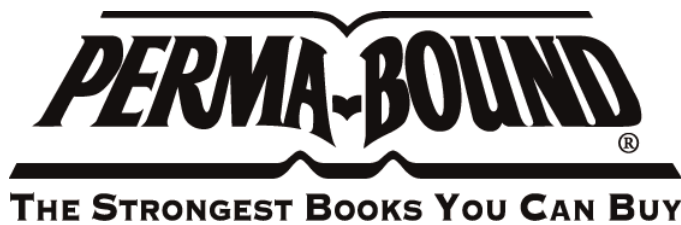
1. 1996
2. A robot can't harm a human or allow a human to come to harm through inaction.
3. A robot must obey human orders, unless the orders contradict rule #1.
4. A robot must protect its own existence, unless this contradicts rules #1 or #2.
5. The calculations and solution included harm to a human.
6. By striking a man in public.
7. Descartes.
8. In order to destroy The Brain
9. Cinderella
10. The Society for Humanity

Part III: Fill-in (20 points)

1. Dave, twiddling
2. Nestor 10, etheric physics
3. European, Tropic
4. Herbie, science/math
5. Speedy, First

Part IV: Essay Questions (30 points)

Answers will vary.



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