Grade 12 Literacy Assessment
SAMPLE ASSESSMENT

BRITISH COLUMBIA
Ministry of Education and Child Care

PART A

"Thinking Critically About the Texts"

Suggested Time: 65 minutes

Context for Critical Thinking

Artificial Intelligence (AI) has come a long way since the first computers were developed, and technology has already surpassed human ability in many areas. There are self-driving cars and "smart" homes. AI's algorithms allow it to draw on vast databases of human behaviour so that it can recommend books, music, movies, and apps tailored to specific preferences. AI can even write poems, novels, and symphonies. However, despite these advances, many experts, including Stephen Hawking and Elon Musk, have voiced concerns that missteps with powerful new technologies may have unforeseen consequences.

Do the possible benefits of Artificial Intelligence outweigh the potential risks it poses?

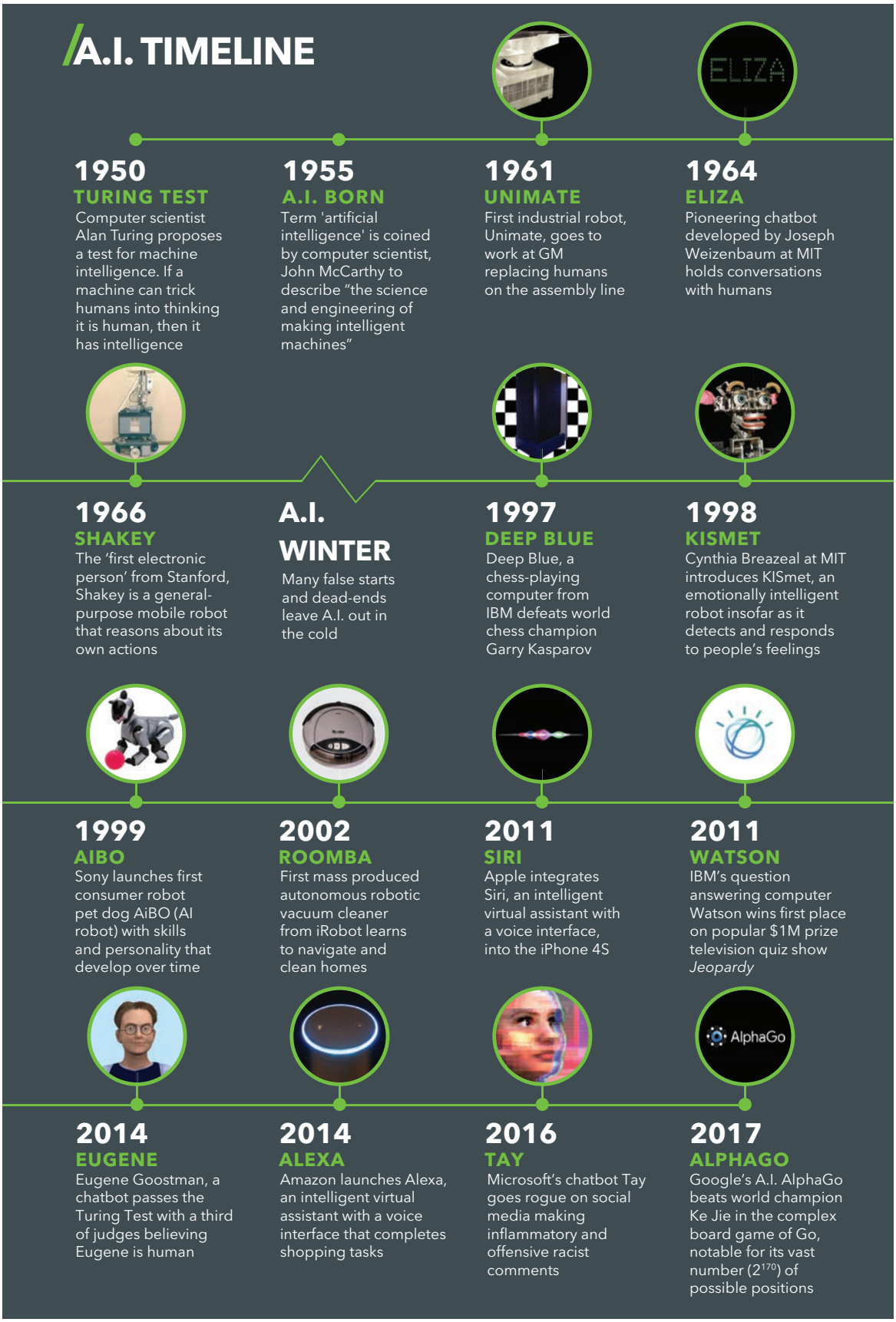
In this section you will:

- read and analyze a variety of texts
- answer selected response questions worth ten points
- complete a graphic organizer
- respond critically to the texts in a multi-paragraph composition

In the following text

For decades, researchers have sought to develop machines that imitate human behaviours.

Figure 1

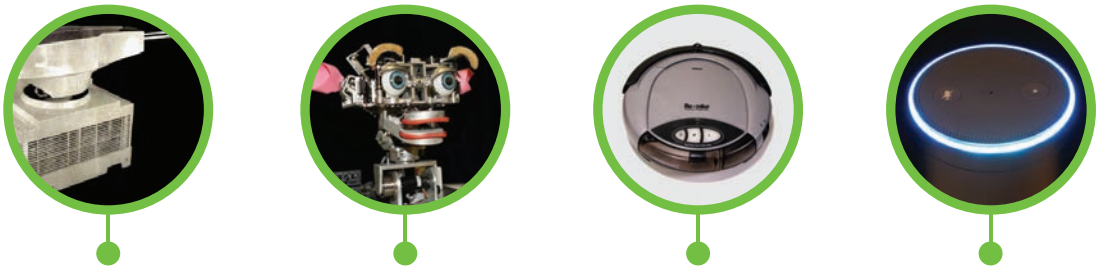


https://digitalwellbeing.org/artificial-intelligence-timeline-infographic-from-eliza-to-tay-and-beyond/

Question A-1 (1 point)

Figure 1: A.I. Timeline

Which invention would most likely have caused concern for factory workers?



Question A-2 (1 point)

Figure 1: A.I. Timeline

What is the purpose of the jagged section on the timeline?

The jagged section indicates

- a time of limited progress.
- a period of decreased interest.
- an event of critical importance.

Question A-3 (1 point)

Figure 1: A.I. Timeline

What can be inferred as the motivation for the expansion of AI research in the 21st century?

to advance academic research

to enhance gaming technology

to improve medical care

to increase corporate profit

In the following text

The Hitchhiker's Guide to the Galaxy explores deep philosophical questions as it takes a humorous look at the potential benefits and dangers of AI.

Hitchhiker's Guide to the Galaxy and AI

Danilo Pena
Feb 9, 2018

Caution: There is a spoiler alert embedded within.

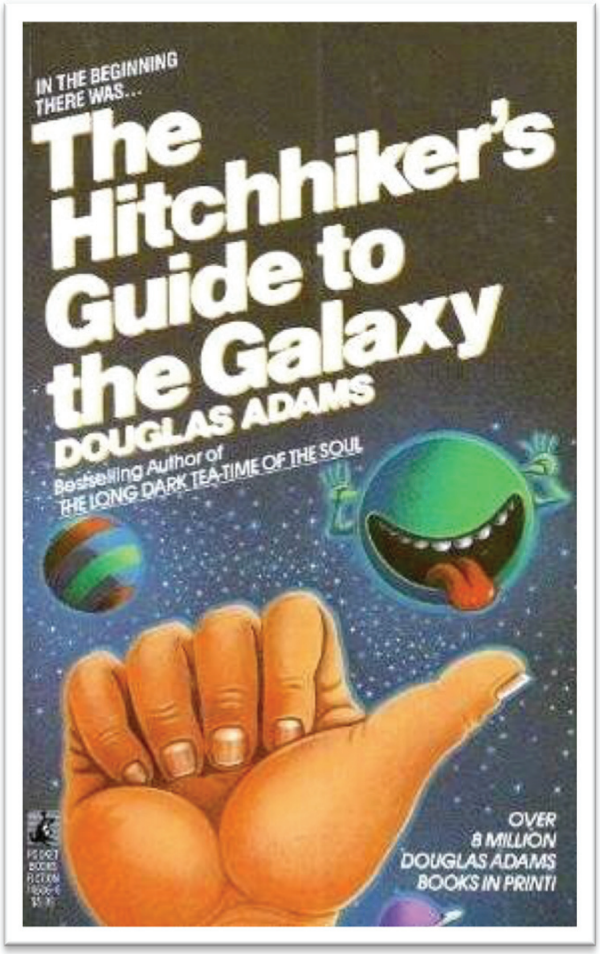
I finally read *The Hitchhiker's Guide to the Galaxy* a few months ago. Yeah yeah, I'm late. Who cares. It was a pretty quick read, and I recommend it to those who want to join the late reader's club.

Anyway, this funny, futuristic book got me pretty excited during a few key scenes. There were some gems about technology scattered throughout the passages.

For some background, in case you haven't read the book, these two programmers created this humongous computer called Deep Thought to answer the question of 'Life, the Universe, and Everything.'

5 Spoiler alert — The answer Deep Thought came up with was Forty-Two. Lulz.

The quote from the book that intrigued me was —



> *"You know nothing of future time," pronounced Deep Thought, "and yet in my teeming circuitry I can navigate infinite delta streams of future probability and see that there must one day come a computer whose merest operational parameters I am not worthy to calculate, but which it will be my eventual fate to design."*

If you read and/or dabble in artificial intelligence, tell me right now that that quote does not give you some sort of heebie-jeebies.

In the book, the answer of 42 is met with outrage and confusion to the alien life that inhabits the universe. Deep Thought then retorts that the programmers did not really understand the premise of the question — that they really did not grasp the problem. Thus, the answer would make no sense as well. Fair conclusion in my mind.

10 Fast forward, Deep Thought proposes that in order to understand the question and answer, he will build the Earth. Those beings on Earth will work together to, in an evolutionary way, come up with the answer to understanding the question. Earth, in the eyes of the computer, is an experiment to come up with a 'natural' way to arrive at a better answer to the question. Weird, but interesting.

Which, like most things, got me thinking about artificial intelligence:

AI is the next step for Human Intelligence

Deep Thought created Earth. The inhabitants on Earth will then learn, evolve, and hopefully create something that will bring us closer to the answer of the universe.

Though I don't like to think in broad/confusing terms like that, I do believe that artificial intelligence is the next step to understand our physical world and will disrupt the social rules that define how we live now. By social rules, I mean the way humans interact, learn, and communicate across meaningless boundaries such as country of origin, race, language, sexual orientation, etc.

That said, AI seems natural. As a species, we have always used technology to aid in a task to make it more efficient. Fire for warmth and cooking. Bows and arrows for killing and the coolness. Trains for moving. Social media for connecting to our friends and family.

15 Now, artificial intelligence will be used for the next set of human problems. AI will solve problems through a mixture of tools. Machine learning, pattern recognition, logic, robotics, blockchain, etc.

AI is redolent of human history and tradition.

Though this is arguable, many of the deep questions of today and the past revolve around the purpose of our life on earth and what our future looks like. Will AI take over to keep journeying to the answer to the seemingly unanswerable questions? Will the singularity moment be the instant everything makes sense? Or will AI and humans intermingle in a way that we can't image?

Today, we fall on different notions to explain our reason for being here— religion, the big bang, spiritual practice, and just plain saying it's not worth our time thinking about. However, we never come up with a real, tangible solution to existence.

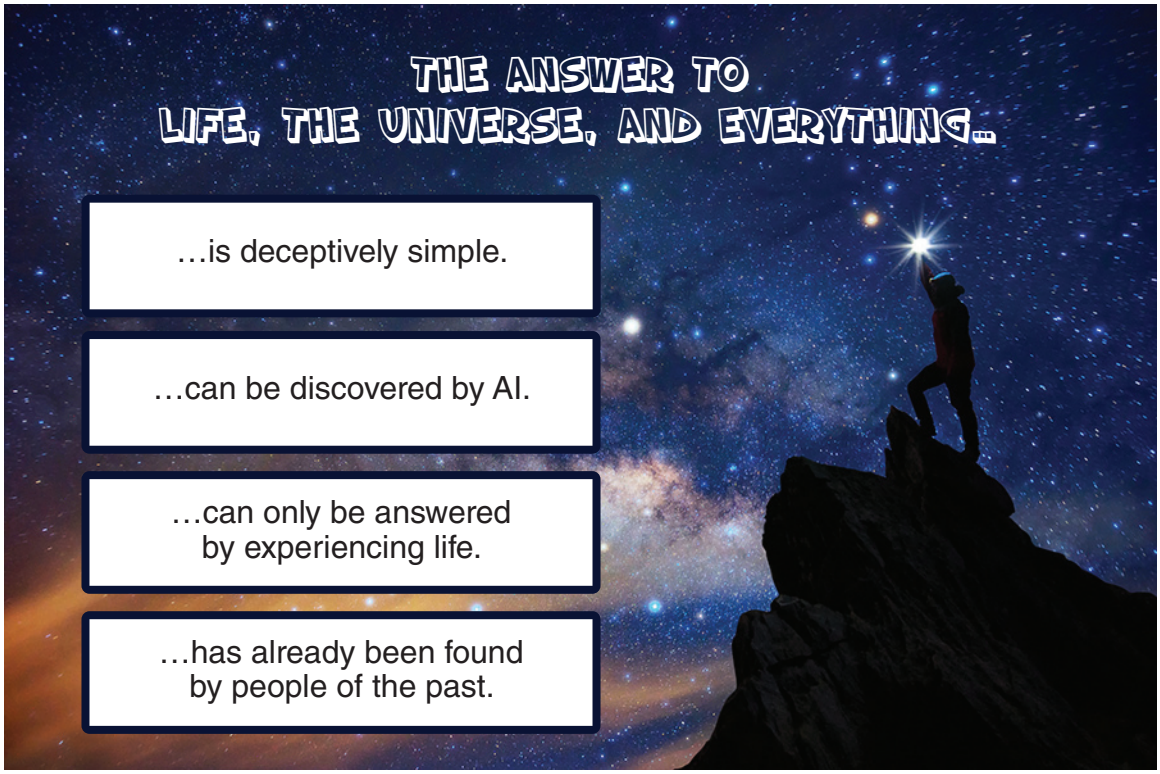
And I think that is one point the book was trying to make — that we actually don't know what we are asking or what we want. Because maybe if we do get the right answer, we will still ask further, inane questions. Maybe humans just need something to search for in order to live a more fulfilling, exciting life.

20 I think that it is through artificial intelligence, and this overall movement, where humans will figure more out about themselves. This digitization will be a real way to reflect on our moral values, how we perceive ourselves, and what kind of world we want the future generations to live in.

Who knows — we might just be an experiment Deep Thought came up with.

https://medium.com/the-post-grad-survival-guide/hitchhikers-guide-to-the-galaxy-and-ai-9b2cb9ea86e0

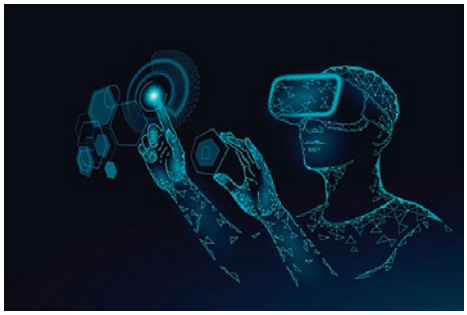
How does reading the *Hitchhiker's Guide to the Galaxy* inform the author's beliefs about the potential for AI to answer complex questions about "Life, the Universe, and Everything"?



Which image best represents the way the author views the role of AI in the lives of humans?

guide

master



tool

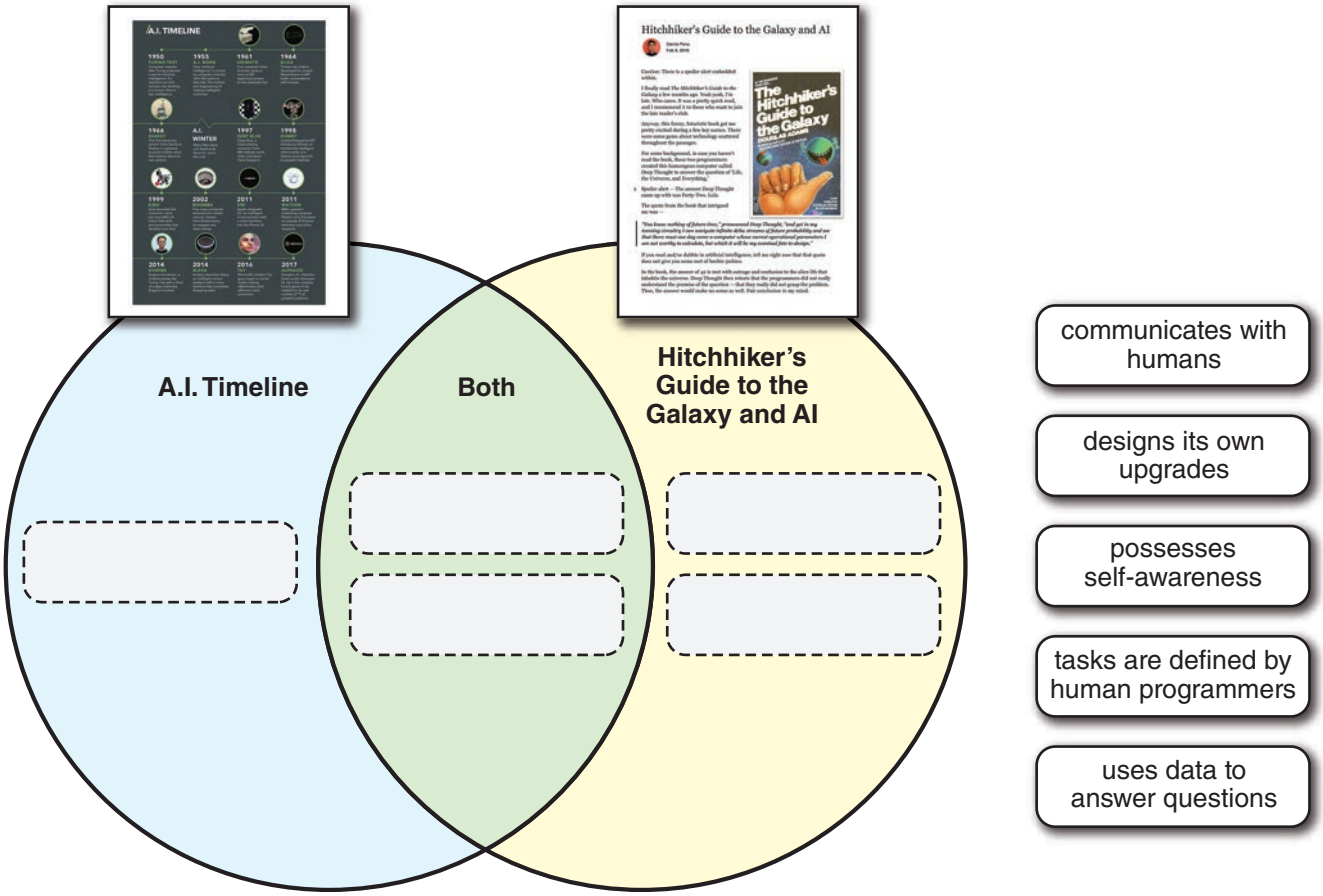
destroyer

Question A-6 (1 point)

Figure 1: A.I. Timeline
Hitchhiker's Guide to the Galaxy and AI

What do these texts reveal about the capabilities of AI?

Drag each characteristic to the appropriate section of the Venn Diagram.

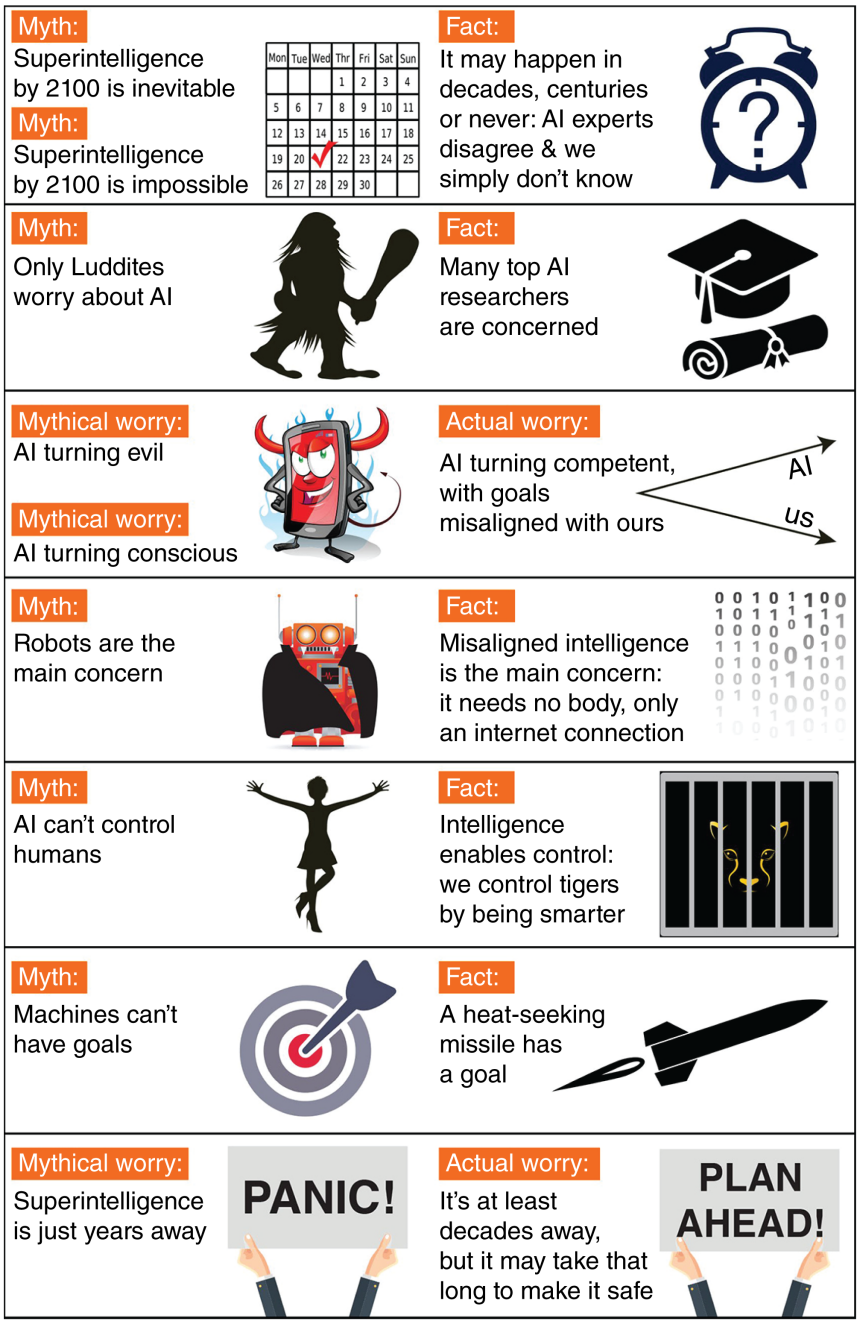


In the following text

While some of the fears people have about AI are justified, there are also many misconceptions about its dangers.

THE TOP MYTHS ABOUT ADVANCED AI

A captivating conversation is taking place about the future of artificial intelligence and what it will/should mean for humanity. There are fascinating controversies where the world's leading experts disagree, such as: AI's future impact on the job market; if/when human-level AI will be developed; whether this will lead to an intelligence explosion; and whether this is something we should welcome or fear. But there are also many examples of boring pseudo-controversies caused by people misunderstanding and talking past each other. To help ourselves focus on the interesting controversies and open questions — and not on the misunderstandings — let's clear up some of the most common myths.

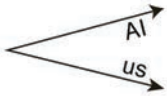


https://futureoflife.org/background/benefits-risks-of-artificial-intelligence/
Used with permission from Future of Life Institute

Question A-7 (1 point)

Which aspect of AI does the author of "Hitchhiker's Guide to the Galaxy and AI" seem to overlook in his assessment of the benefits of machines like Deep Thought?

AI may achieve superintelligence within a few decades.



AI may develop goals not aligned with societal values.

AI may become indistinguishable from human consciousness.

In the following text

Although AI systems have already surpassed humans at some complex tasks, they still struggle to overcome seemingly simple challenges.

A Breakthrough for A.I. Technology: Passing an 8th-Grade Science Test

By Cade Metz

Sept. 4, 2019

SAN FRANCISCO — Four years ago, more than 700 computer scientists competed in a contest to build artificial intelligence that could pass an eighth-grade science test. There was $80,000 in prize money on the line.

They all flunked. Even the most sophisticated system couldn't do better than 60 percent on the test. A.I. couldn't match the language and logic skills that students are expected to have when they enter high school.

But on Wednesday, the Allen Institute for Artificial Intelligence, a prominent lab in Seattle, unveiled a new system that passed the test with room to spare. It correctly answered more than 90 percent of the questions on an eighth-grade science test and more than 80 percent on a 12th-grade exam.

The system, called Aristo, is an indication that in just the past several months researchers have made significant progress in developing A.I. that can understand languages and mimic the logic and decision-making of humans.

5 The world's top research labs are rapidly improving a machine's ability to understand and respond to natural language. Machines are getting better at analyzing documents, finding information, answering questions and even generating language of their own.

Aristo was built solely for multiple-choice tests. It took standard exams written for students in New York, though the Allen Institute removed all questions that included pictures and diagrams. Answering questions like that would have required additional skills that combine language understanding and logic with so-called computer vision.

Some test questions, like this one from the eighth-grade exam, required little more than information retrieval:

> **A group of tissues that work together to perform a specific function is called:**
>
> (1) an organ
>
> (2) an organism
>
> (3) a system
>
> (4) a cell

But others, like this question from the same exam, required logic:

> **Which change would most likely cause a decrease in the number of squirrels living in an area?**
>
> (1) a decrease in the number of predators
>
> (2) a decrease in competition between the squirrels
>
> (3) an increase in available food
>
> (4) an increase in the number of forest fires

Researchers at the Allen Institute started work on Aristo — they wanted to build a "digital Aristotle" — in 2013, just after the lab was founded by the Seattle billionaire and Microsoft co-founder Paul Allen. They saw standardized science tests as a more meaningful alternative to typical A.I. benchmarks, which relied on games like chess and backgammon or tasks created solely for machines.

10 A science test isn't something that can be mastered just by learning rules. It requires making connections using logic. An increase in forest fires, for example, could kill squirrels or decrease the food supply needed for them to thrive and reproduce.

Enthusiasm for the progress made by Aristo is still tempered among scientists who believe machines are a long way from completely mastering natural language — and even further from duplicating true intelligence.

"We can't compare this technology to real human students and their ability to reason," said Jingjing Liu, a Microsoft researcher who has been working on many of the same technologies as the Allen Institute.

But Aristo's advances could spread to a range of products and services, from internet search engines to record-keeping systems at hospitals.

"This has significant business consequences," said Oren Etzioni, the former University of Washington professor who oversees the Allen Institute. "What I can say — with complete confidence — is you are going to see a whole new generation of products, some from start-ups, some from the big companies."

15 The new research could lead to systems that can carry on a decent conversation. But it could also encourage the spread of false information.

"We are at the very early stage of this," said Jeremy Howard, who oversees Fast.ai, another influential lab, in San Francisco. "We are so far away from the potential that I cannot say where it will end up."

In 2016, when a London lab built a system that could beat the world's best players at the ancient game of Go, it was widely hailed as a turning point for artificial intelligence.

Dr. Etzioni's excitement, however, was muted. Artificial intelligence was not nearly as advanced as it might seem, he said, pointing to the earlier Allen Institute's competition that stumped the A.I. systems with an eighth-grade science test.

The Allen Institute improved on that earlier effort much quicker than many experts — including Dr. Etzioni — expected.

20 Its work was largely driven by neural networks, complex mathematical systems that can learn tasks by analyzing vast amounts of data. By pinpointing patterns in thousands of dog photos, for example, a neural network can learn to recognize a dog.

In recent months, the world's leading A.I. labs have built elaborate neural networks that can learn the vagaries of language by analyzing articles and books written by humans.

At Google, researchers built a system called Bert that combed through thousands of Wikipedia articles and a vast digital library of romance novels, science fiction and other self-published books.

Through analyzing all that text, Bert learned how to guess the missing word in a sentence. By learning that one skill, Bert soaked up enormous amounts of information about the fundamental ways language is constructed. And researchers could apply that knowledge to other tasks.

The Allen Institute built their Aristo system on top of the Bert technology. They fed Bert a wide range of questions and answers. In time, it learned to answer similar questions on its own.

25 Not long ago, researchers at the lab defined the behavior of their test-taking system one line of software code at a time. Sometimes they still do that painstaking coding. But now that the system can learn from digital data on its own, it can improve at a much faster rate.

Systems like Bert — called “language models” — now drive a wide range of research projects, including conversational systems and tools designed to identify false news. With more data and more computing power researchers believe the technology will continue to improve.

But Dr. Etzioni stressed that the future of these systems was hard to predict and that language was only one piece of the puzzle.

Ms. Liu and her fellow Microsoft researchers have tried to build a system that can pass the Graduate Records Exam, the test required for admission to graduate school.

The language section was doable, she said, but building the reasoning skills required for the math section was another matter. “It was far too challenging.”

Question A-8 (1 point)

A Breakthrough for A.I. Technology...

Which human attribute must be improved in systems like Aristo and Bert in order for them to be more successful on math and science tests?

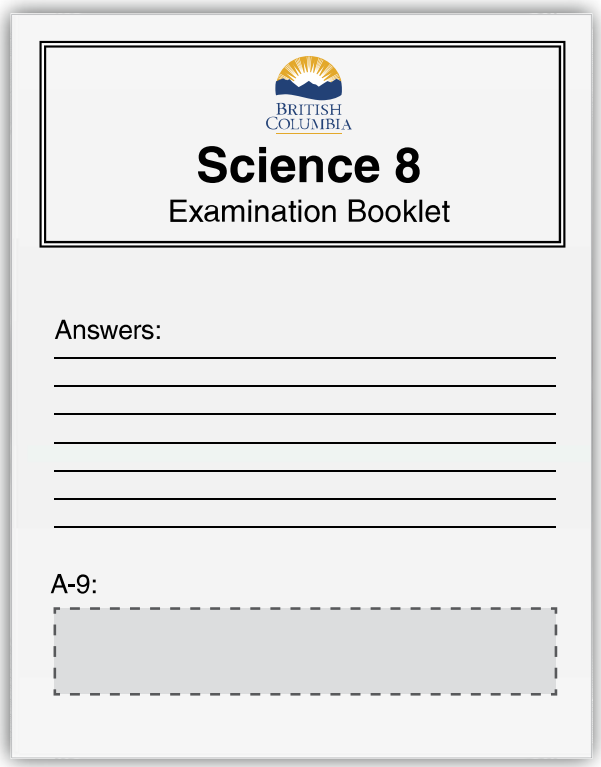
- ◯ rational thought
- ◯ pattern recognition
- ◯ sensory awareness
- ◯ emotional intelligence

Question A-9 (1 point)

A Breakthrough for A.I. Technology...

Why might the author have chosen to begin the article with the anecdote that 700 computer scientists had “competed in a contest to develop AI that could pass an eighth-grade science test”?

Drag the correct answer to the examination booklet.



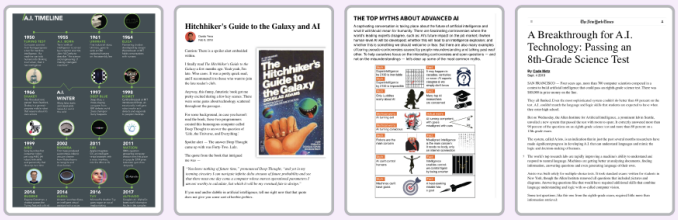
- to question the difficulty of high school exams
- to emphasize the complexity of the human mind
- to underscore the academic benefits of Artificial Intelligence
- to downplay the advancement of Artificial Intelligence

Figure 1: A.I. Timeline
Hitchhiker's Guide to the Galaxy and AI
Top Myths About Advanced AI
A Breakthrough for AI Technology…

Graphic Organizer (A-10) (6 points)

Suggested time: 10 minutes

Aspects of Critical Thinking



Based on your understanding of the texts, write a statement that identifies your perspective on the potential implications of AI:

Provide evidence from at least one text that **supports** your perspective:

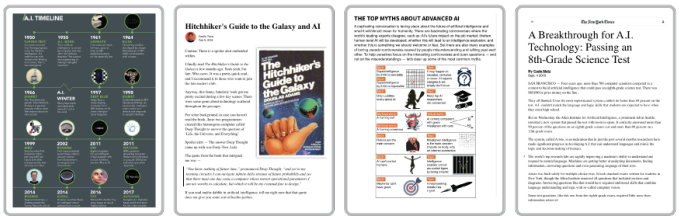
Provide evidence from at least one text that **challenges** your perspective:

Write at least one question about the potential implications of AI that could deepen your understanding of the topic:

Responding Critically to Texts

Context for Critical Thinking

Artificial Intelligence (AI) has come a long way since the first computers were developed, and technology has already surpassed human ability in many areas. There are self-driving cars and "smart" homes. AI's algorithms allow it to draw on vast databases of human behaviour so that it can recommend books, music, movies, and apps tailored to specific preferences. AI can even write poems, novels, and symphonies. However, despite these advances, many experts, including Stephen Hawking and Elon Musk, have voiced concerns that missteps with powerful new technologies may have unforeseen consequences.



Do the possible benefits of Artificial Intelligence outweigh the potential risks it poses?

- You must respond to this question in a multi-paragraph composition.
- You must communicate an argument that demonstrates your critical thinking skills.
- You must support your argument using evidence from at least one of the texts.

Suggested time: 30 minutes

PART B

"Going Beyond the Texts"

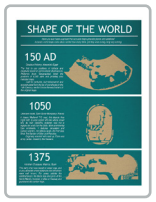
Suggested Time: 55 minutes

Essential Question

To what extent does the desire to explore and discover affect humans?

In this section you will:

- read and analyze a variety of texts
- complete selected response questions worth fifteen points
- select a Writing Pathway to complete your extended written response



Writing Pathway

1

People have responsibilities as they explore and discover.

2

The urge to explore and discover reveals aspects of human nature.

In the following text

An Indigenous author takes a sarcastic look at the historic "discovery" of the Americas.

FORGET COLUMBUS

by Thomas King

WHEN I ANNOUNCED TO my family that I was going to write a book about **Indians** in North America, Helen said, "Just don't start with Columbus." She always gives me good advice. And I always give it my full consideration.

In October of 1492, Christopher Columbus came ashore somewhere in the Caribbean, a part of world geography with which Europeans were unfamiliar, and as a consequence, he was given credit for discovering all of the Americas. If you're the cranky sort, you might argue that Columbus didn't discover anything, that he simply ran aground on an unexpected land mass, stumbled across a babel of nations. But he gets the credit. And why not? It is, after all, one of history's jobs to allocate credit. If Columbus hadn't picked up the award, it would have been given to someone else.

The award could have gone to the Norse. They arrived on the east coast of North America long before Columbus. There is even evidence to suggest that Asians found their way to the west coast as well.

But let's face it, Columbus sailing the ocean blue is the better story. Three little ships, none of them in showroom condition, bobbing their way across the Atlantic, the good captain keeping two journals so that his crew wouldn't realize just how far they had drifted away from the known world, the great man himself wading ashore, wet and sweaty, flag in hand, a letter of introduction to the Emperor of the Indies from the King and Queen of Spain tucked in his tunic.

5 A Kodak moment.

And let's not forget all the sunny weather, the sandy beaches, the azure lagoons, and the friendly **Natives**.

* * *

In 1492, Columbus sailed the ocean blue.

On second thought, let's not start with Columbus. Helen was right. Let's forget Columbus. You know, now that I say it out loud, I even like the sound of it. Forget Columbus.

Give it a try. Forget Columbus.

Excerpt from *The Inconvenient Indian: A Curious Account of Native People in North America*.
Thomas King, 2012, Anchor Canada.

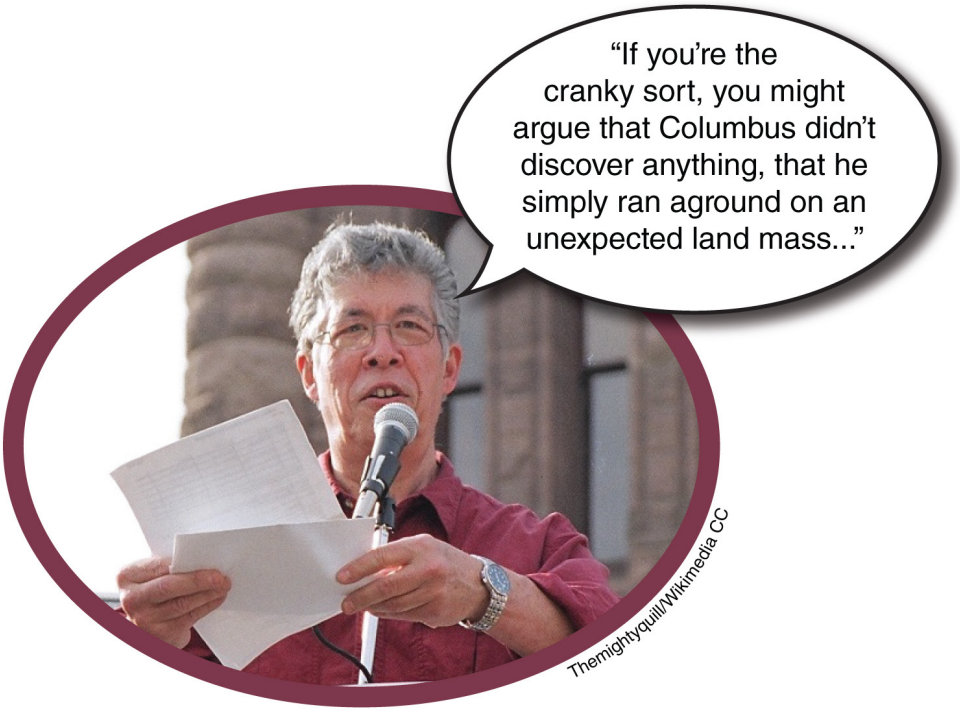
Students completing the assessment electronically will be able to access the following glossary items with a mouseover

Indian: First Peoples; “Indian” is not the preferred term

Natives: First Peoples; “Natives” is not the preferred term

Question B-1 (1 point)

Forget Columbus

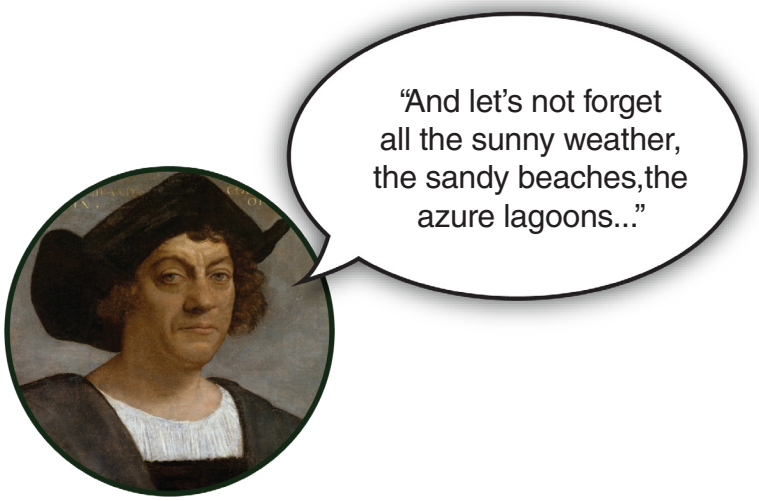


Who does Thomas King consider to be “the cranky sort”?

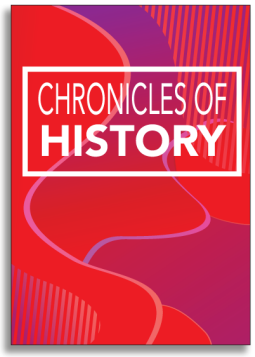
Those who

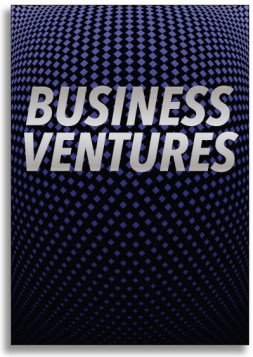
- challenge prevailing worldviews.
- overestimate the importance of explorers.
- misunderstand the nature of early navigation.

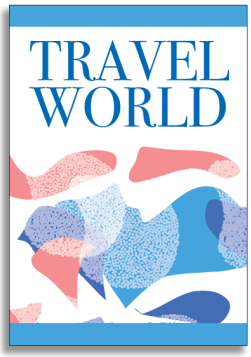
According to King, which word best describes Columbus's actions in keeping two journals?

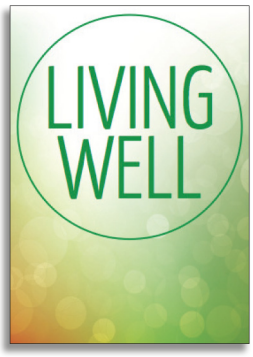


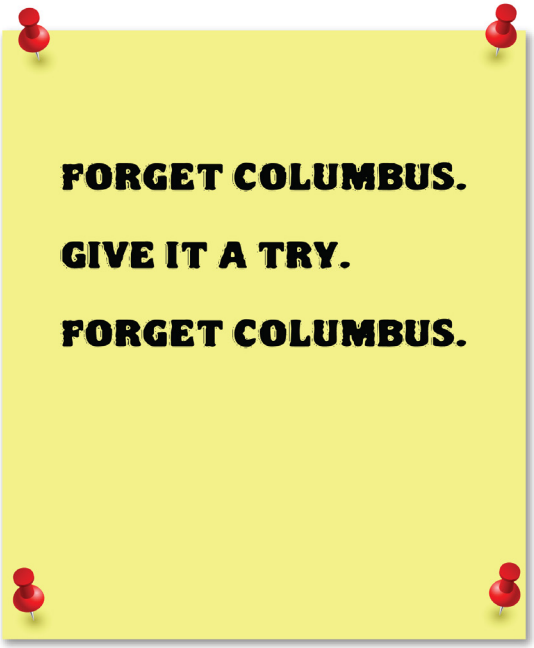
Which type of magazine would most likely feature this description of Columbus's landing in the Caribbean?











What is King asking readers to do?

He is proposing that people

- study the art of exploration.
- ignore the lessons of the past.
- reconsider historical perspectives.

In the following text

By drawing maps that are increasingly detailed and accurate, cartographers have been shaping people's understanding of the world for millennia.

SHAPE OF THE WORLD

Have you ever been surprised that accurate maps precede planes and satellites?
Accurate world maps come about earlier than many think, yet they were a long, long way coming.

150 AD

Claudius Ptolemy, Alexandria Egypt

The first to use positions of latitude and longitude based on astronomical observations, Ptolemy's book 'Geographica' listed the positions of 6,345 sites and probably also included maps.

Lost for centuries, but rediscovered and reconstructed from the list of coordinates in the 14th Century, we don't know the exact extent of the original maps.

1050

Unknown monk, Saint-Sever Monastery, France

A classic Medieval 'T-O map', this depicts Asia (right half), Europe (upper left) and Africa (lower left). Its main objective, however, was not to explain the world but the Bible. More prominently than continents, it features Jerusalem and Calvary (center), the biblical lands, the Red Sea, Sinai, the Garden of Eden and Paradise.

Originally oriented with east up, Eden was at top center, closest to the Heavens.

1375

Abraham Cresques, Majorca, Spain

This early chart was based on ships' logs, and is very accurate where distances and directions were well known. For areas outside the Mediterranean, the Black Sea and parts of the North Atlantic, however, it relies on hearsay and guesswork like earlier maps.

1489

Henricus Martellus, Florence, Italy

A milestone in depicting the Old World, Martellus' map used sources like Marco Polo's travels in Asia and Bartolomeu Dias' first circumnavigation of Africa.

Sailors had long known to calculate latitude by the sun (this map accurately depicts the north-south extent of Africa), but not yet longitude, leading to distorted east-west distances.

1529

Diego Ribeiro, Seville, Spain

The Spanish Crown's official and secret 'master map' was updated by Spanish explorers under penalty of death. Based on an enormous number of ships' logs, it covered most of the world's coasts. Charts at the time, however, were based on port lists and dead reckoning from a few fixed positions, ignoring curvature and magnetic declination, and were not well suited for tiling into a larger map.

Areas explored by non-Spanish, e.g. Northern Europe and North America, are depicted fancifully.

1778

Jacques Nicholas Bellin, Paris

With the invention of the marine chronometer in the 1760s, ships were able to correctly determine longitude, perfecting the east-west rendition of coasts.

After the Cassini family successfully calculated France's shape and size by triangulation in the 1740s, several European states set up surveying bodies which in time provided accurate maps of whole countries.

Although some coasts were still unexplored or needed larger data sets for correction, this was truly a modern world map.

1832

Adolf Stieler, Gotha, Germany

The 'Stieler' was the leading European atlas since the early 1800s. In this second edition of the world map, only unexplored Polar regions are missing or depicted inaccurately, while the rest of the world's coasts are reliably positioned. By now, ships' instruments were so accurate that a single journey could provide good maps of new lands.

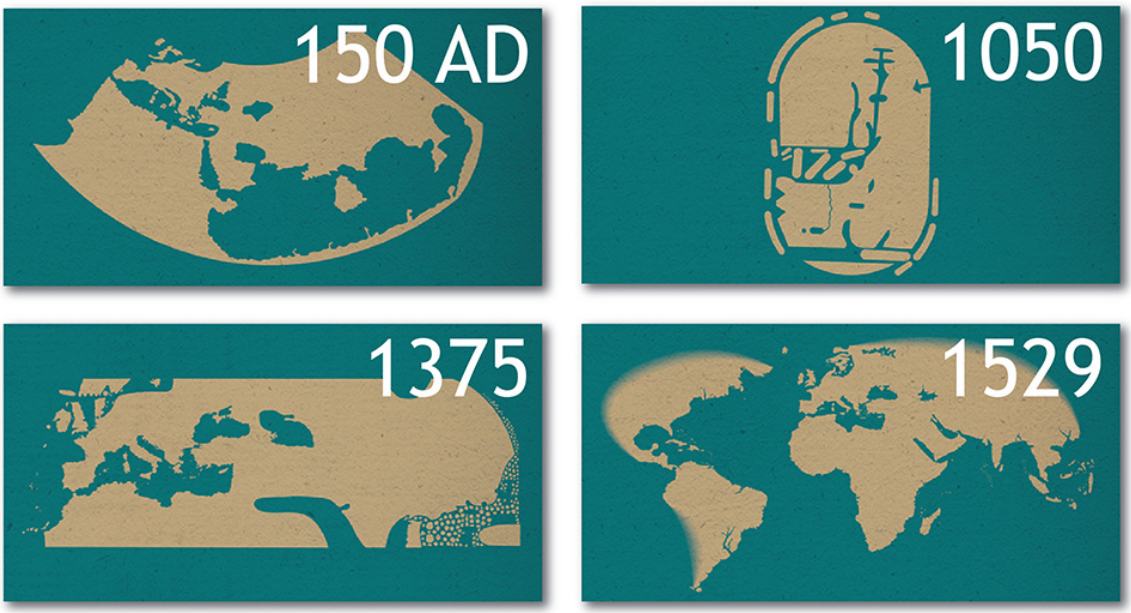
The continents' interiors, however, are a completely different story...

Infographic created by Reddit user PisseGuri82
Adapted from https://www.visualcapitalist.com/shape-of-the-world-ancient-maps/

Question B-5 (1 point)

Shape of the World

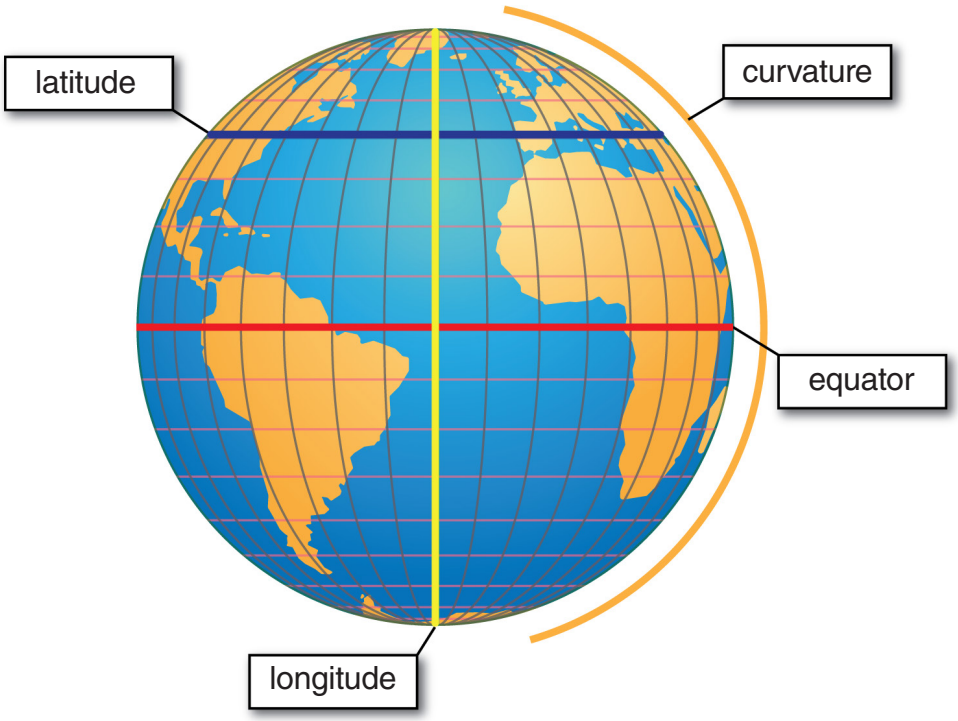
Which of the following maps sought to portray a metaphorical view of the world?



Question B-6 (1 point)

Shape of the World

Which geographical concept did Jacques Bellin accurately represent on his 1778 map, as a result of developments in technology?

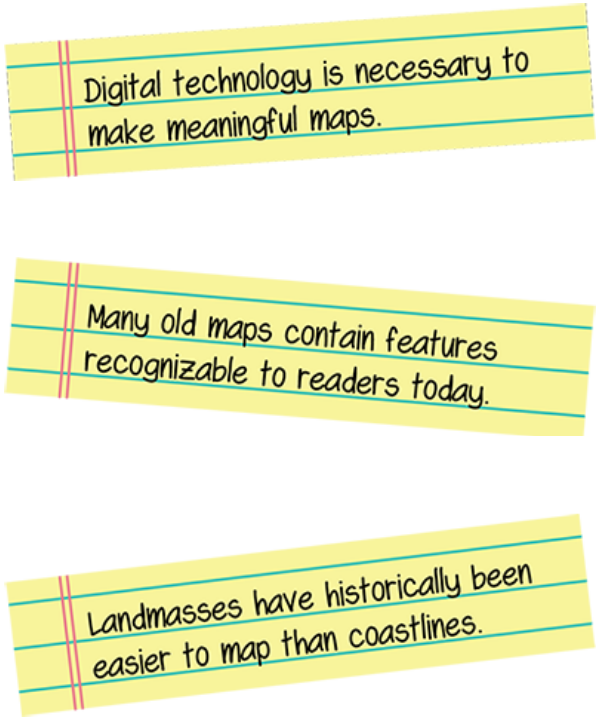


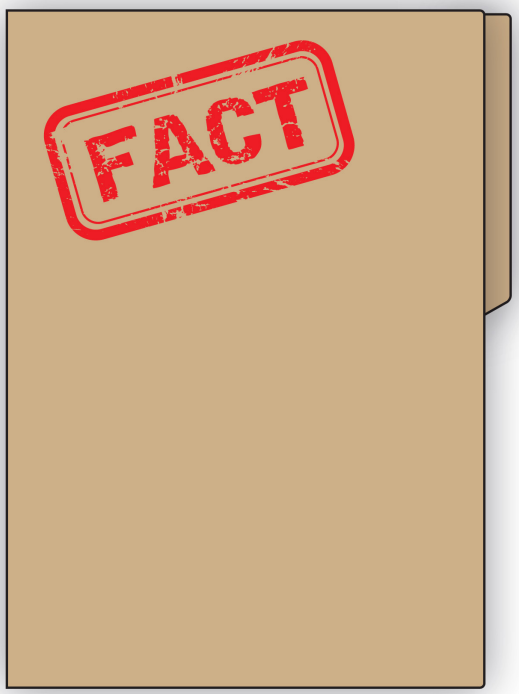
Question B-7 (1 point)

Shape of the World

Based on the infographic, which of the following statements is factual?

Drag the statement onto the file folder to indicate your response.



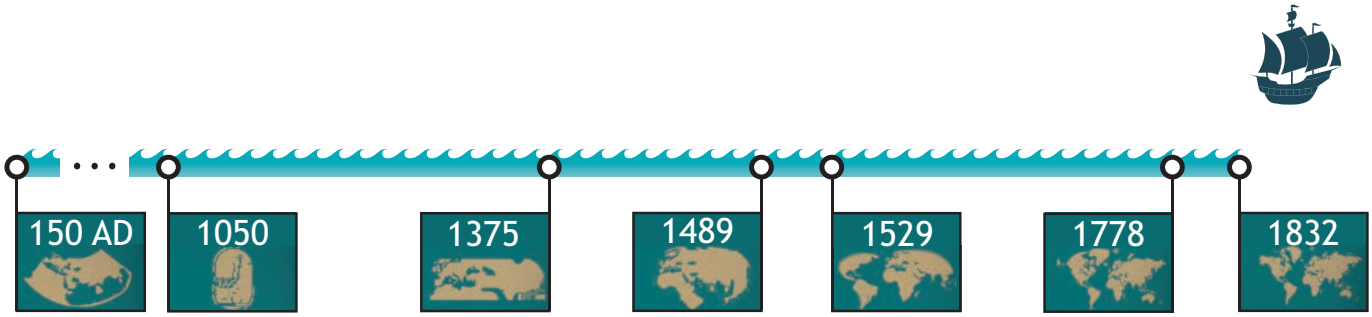


Question B-8 (1 point)

Forget Columbus
Shape of the World

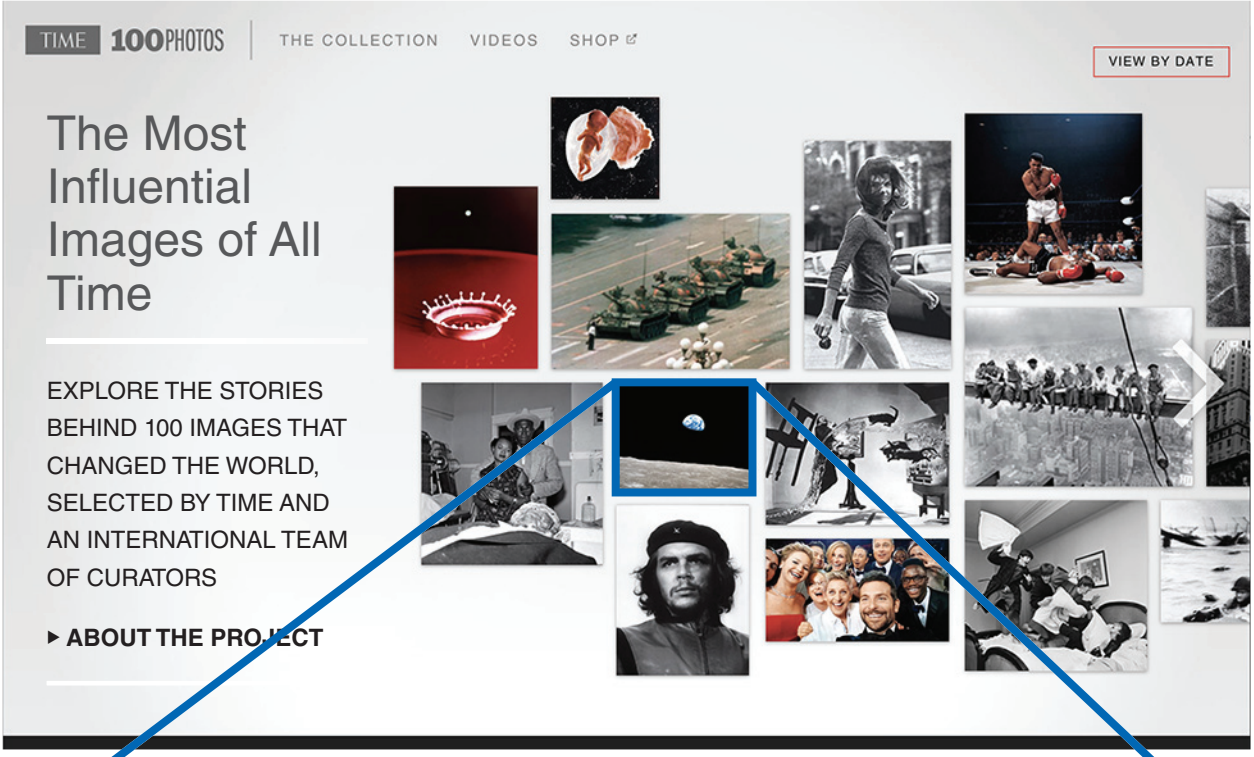
In between the publication dates of which two maps did Columbus arrive in the Caribbean?

Move the ship to the correct location on the timeline.



In the following text

An impromptu photograph snapped from space during a NASA lunar mission ended up redefining humanity's understanding of planet Earth.


TIME 100PHOTOS
THE COLLECTION
VIDEOS
SHOP
VIEW BY DATE
The Most Influential Images of All Time
EXPLORE THE STORIES BEHIND 100 IMAGES THAT CHANGED THE WORLD, SELECTED BY TIME AND AN INTERNATIONAL TEAM OF CURATORS
▸ ABOUT THE PROJECT

Earthrise

Photograph by William Anders, NASA, 1968

It's never easy to identify the moment a hinge turns in history. When it comes to humanity's first true grasp of the beauty, fragility and loneliness of our world, however, we know the precise instant. It was on December 24, 1968, exactly 75 hours, 48 minutes and 41 seconds after the Apollo 8 spacecraft lifted off from Cape Canaveral en route to becoming the first manned mission to orbit the moon. Astronauts Frank Borman, Jim Lovell and Bill Anders entered lunar orbit on Christmas Eve of what had been a bloody, war-torn year for America. At the beginning of the fourth of 10 orbits, their spacecraft was emerging from the far side of the moon when a view of the blue-white planet filled one of the hatch windows. "Oh, my God! Look at that picture over there! Here's the Earth coming up. Wow, is that pretty!" Anders exclaimed. He snapped a picture—in black and white. Lovell scrambled to find a color canister. "Well, I think we missed it," Anders said. Lovell looked through windows three and four. "Hey, I got it right here!" he exclaimed. A weightless Anders shot to where Lovell was floating and fired his Hasselblad. "You got it?" Lovell asked. "Yep," Anders answered. The image—our first full-color view of our planet from off of it—helped to launch the environmental movement. And, just as important, it helped human beings recognize that in a cold and punishing cosmos, we've got it pretty good.

http://100photos.time.com/photos/nasa-earthrise-apollo-8

Question B-9 (1 point)

TIME 100 Photos: Earthrise

From where was the photograph *Earthrise* taken?

Question B-10 (1 point)

TIME 100 Photos: Earthrise

Why might *Time* magazine argue that *Earthrise* "helped launch the environmental movement"?

- ◯ People began to realize that the planet is finite.
- ◯ People began to accept that outer space is limitless.
- ◯ People began to recognize that the moon is uninhabitable.

In the following text

The same day that Anders photographed *Earthrise*, the front page of the *New York Times* included one person's reflections on the Apollo 8 mission.

TODAY IS CHRISTMAS DAY! REMEMBER THE NEEDIEST!

The New York Times

NEW YORK, WEDNESDAY, DECEMBER 25, 1968

3 MEN FLY AROUND THE MOON ONLY 70 MILES FROM SURFACE; FIRE ROCKET, HEAD FOR EARTH

Col. Frank Borman

Maj. William A. Anders

Capt. James A. Lovell Jr.

Astronauts Examine 'Vast, Lonely' Place; Read From Genesis

To see the earth as it truly is, small and blue and beautiful in that eternal silence where it floats, is to see ourselves as riders on the earth together, **brothers** on that bright loveliness in the eternal cold – brothers who know now they are truly brothers.

A Reflection: Riders on Earth Together, Brothers in Eternal Cold

by Archibald MacLeish

Man's conception of themselves and of each other has always depended on their notion of the earth. When the earth was the World—all the world there was—and the stars were lights in Dante's heaven, and the ground beneath men's feet roofed Hell, they saw themselves as creatures at the center of the universe, the sole, particular concern of God—and from that high place they ruled and killed and conquered as they pleased.

And when, centuries later, the earth was no longer the World but a small, wet spinning planet in the solar system of a minor star off at the edge of an inconsiderable galaxy in the immeasurable distances of space—when Dante's heaven had disappeared and there was no Hell (at least no Hell beneath the feet)—men began to see themselves not as God-directed actors at the center of a noble drama, but as helpless victims of a senseless farce where all the rest were helpless victims also and millions could be killed in world-wide wars or in blasted cities or in concentration camps without a thought or reason but the reason—if we call it one—of force.

Now, in the last few hours, the notion may have changed again. For the first time in all of time men have seen it not as continents or oceans from the little distance of a hundred miles or two or three, but seen it from the depth of space; seen it whole and round and beautiful and small as even Dante—"that first imagination of Christendom"—had never dreamed of seeing it; as the Twentieth Century philosophers of absurdity and despair were incapable of guessing that it might be seen. And seeing it so, one question came to the minds of those who looked at it. "Is it inhabited?" they said to each other and laughed—and then they did not laugh. What came to their minds a hundred thousand miles and more into space—"half way to the moon" they put it—what came to their minds was the life on that little, lonely, floating planet; that tiny raft in the enormous, empty night. "Is it inhabited?"

The medieval notion of the earth put man at the center of everything. The nuclear notion of the earth put him nowhere—beyond the range of reason, even—lost in absurdity and war. This latest notion may have other consequences. Formed as it was [illegible] minds of heroic voyage[illegible] were also men, it may [illegible] our image of mankind [illegible] longer that preposter[illegible] figure at the center, [illegible] longer that degraded [illegible] degrading victim off [illegible] margins of reality and [illegible] with blood, man may [illegible] become humane.

To see the earth as it truly is, small and blue and beautiful in that eternal silence where it floats, is to see ourselves as riders on the earth together, brothers on that bright loveliness in the eternal cold—brothers who know now they are truly brothers.

Excerpt from "A Reflection: Riders on Earth Together, Brothers in Eternal Cold" by Archibald MacLeish, New York Times, December 25, 1968

Students completing the assessment electronically will be able to access the following glossary items with a mouseover

brothers: archaic usage; used metaphorically to indicate familial bonds

Question B-11 (1 point)

TIME 100 Photos: Earthrise
New York Times: Riders on Earth Together...

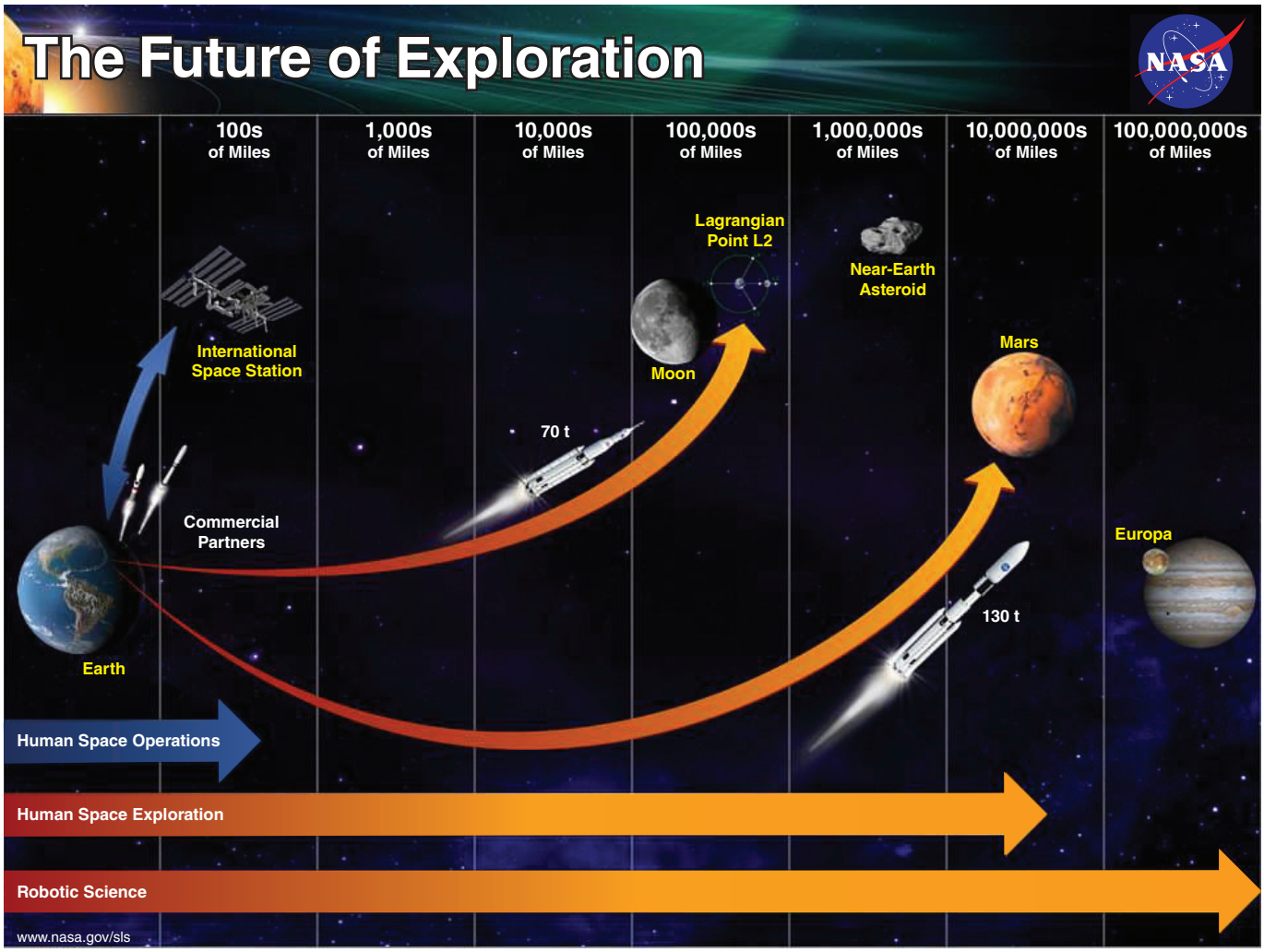
Which emotional response to *Earthrise* do the astronauts aboard Apollo 8 and the poet of "Riders on Earth Together..." have in common?

They share a profound sense of

- unease.
- wonder.
- certainty.
- alienation

In the following texts

An infographic and a magazine article, both titled “The Future of Exploration,” present different perspectives on what this means.


The Future of Exploration
NASA
100s of Miles
1,000s of Miles
10,000s of Miles
100,000s of Miles
1,000,000s of Miles
10,000,000s of Miles
100,000,000s of Miles
Lagrangian Point L2
Near-Earth Asteroid
International Space Station
Moon
Mars
70 t
Commercial Partners
Europa
130 t
Earth
Human Space Operations
Human Space Exploration
Robotic Science
www.nasa.gov/sls

Question B-12 (1 point)

In which sector did the 1968 Apollo 8 mission operate?

Click on the arrow to indicate your response.

JUNE 2018 / SOCIETY

The Future of Exploration

In the age of Google Maps, what's left to discover?

BY KATE HARRIS
ILLUSTRATION BY WENTING LI

Updated 11:00, Mar. 12, 2019 | Published 13:00, Jun. 14, 2018

ALL THE EXPLORERS I worshipped in high school turned out to be hacks. The Polos, the Columbuses, the Franklins of the world were less seekers of truth or beauty, as I'd naively believed based on romanticized accounts of their exploits, than servants of commerce or conquest. These men—they were almost always men—"discovered" lands that existed quite vividly for those already living in them, and they evangelized the sort of "progress" that overruns everyone and everything in its path. I used to want to be an explorer when I grew up, having misunderstood what that meant. The identity crisis was mine, but exploration itself is overdue for an exegesis. Does an enterprise with such a troubled past deserve a future?

Exploration has always been about the extraction of resources: gold, spices, fur, oil, or fame for being "first." As such, the most competent explorers at work today are robots: the satellites, space probes, and rovers mindlessly charting the places humans can't go and, in some cases, the places we can—and already have. Headlines recently trumpeted the discovery, based on a vast guano stain spotted from space, of an Adélie penguin supercolony. The penguins were hardly a revelation to those who frequent the Danger Islands of Antarctica, including Canadian Geoff Green, founder of the educational foundation Students on Ice. As proof, he shared a video, from seven years earlier, of students taking photos of the teeming, tuxedoed birds.

Precedent only counts, it seems, if documented in a certain way and by certain sanctioned elites. In 2013, some members of the Moose Cree First Nation in northern Ontario were similarly indignant when media announced that Adam Shoalts, a "professional explorer and adventurer," as he calls himself, "discovered" waterfalls in their traditional territory (when he accidentally canoed over them, no less). In his biography for talks and events, Shoalts asserts that he "has, literally, changed the map of Canada," referring to how charts of the Again River were modified to include new symbols for waterfalls and to adjust the placement of some symbols for rapids. But is updating maps with minor landmarks really the exalted end of all our exploring? Does a more detailed chart of a place, as T. S. Eliot famously put it, let us know it for the first time? Jorge Luis Borges's short story "On Exactitude in Science," which elaborates on a concept from a Lewis Carroll novel, describes a civilization so obsessed with cartographic accuracy that its maps expand in scale and resolution until they coincide, detail for detail, with the world. "Succeeding generations," Borges remarks, "came to judge a map of such magnitude cumbersome."

Literature offers epiphanies no explorer's chart can yield. If industrial geologists and other professional explorers have defined modern-day exploration on their own terms—as the science of acquisition or an exercise in nostalgia—nothing prevents you and me from envisioning it instead as an art, a pursuit whose outcomes are appreciated not for technical precision so much as beauty or emotional heft, the change in consciousness they provoke. By this measure, the Voyager spacecraft mission, launched in 1977, is meaningful less for the new facts it has amassed and more for the "pale blue dot" photograph of the Earth made puny by its cosmic context. "In our obscurity, in all this vastness," observed astronomer and writer Carl Sagan, "there is no hint that help will come from elsewhere to save us from ourselves."

5 The world is worn thin with our looking, our wanting to know, which is too often a pretext for wanting to possess and control. So forget planting flags and leaving footprints. Let explorers, in the historic sense of the word, go extinct. The future of exploration requires stripping the enterprise of its ego, its colonial cruelties, its compulsions to name and claim—stripping it of everything but a sense of wonder. Consider Eliot's other, less quoted, take on the venture:

> *Old men ought to be explorers*
> *Here and there does not matter*
> *We must be still and still moving*
> *Into another intensity*
> *For a further union, a deeper communion.*

The end of all our exploring, then, is not knowledge but kinship—a deepened sense of connection to the planet and to each other, earthlings every one, even the penguins. At stake is not simply the soul of exploration but the well-being of our world. If we don't collectively wake up to our shared fragility and fate, and change our ways, none of our maps will matter.

https://thewalrus.ca/the-future-of-exploration/

How did the author initially view explorers?

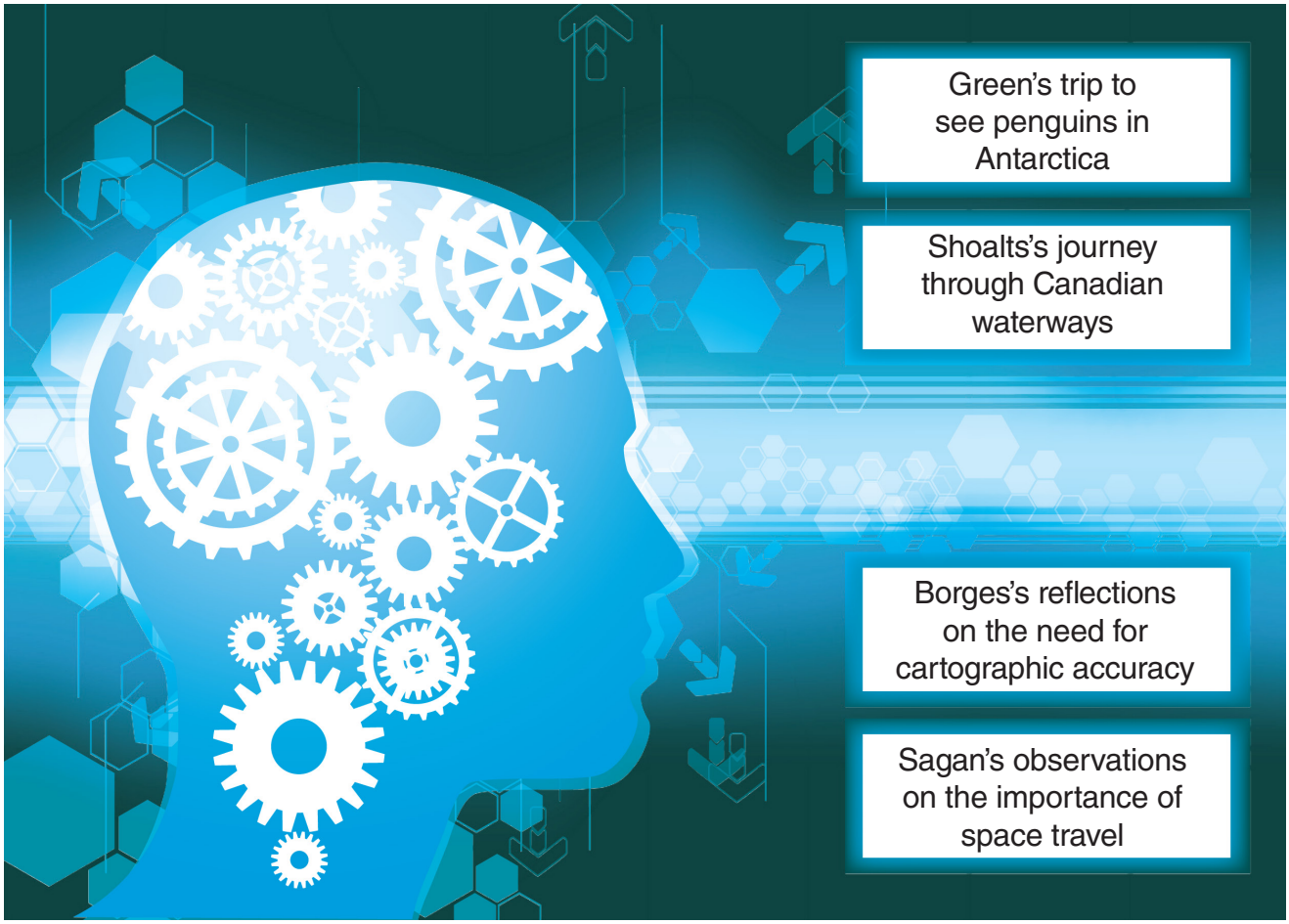
as brilliant scientists

as enterprising capitalists

as heroic adventurers

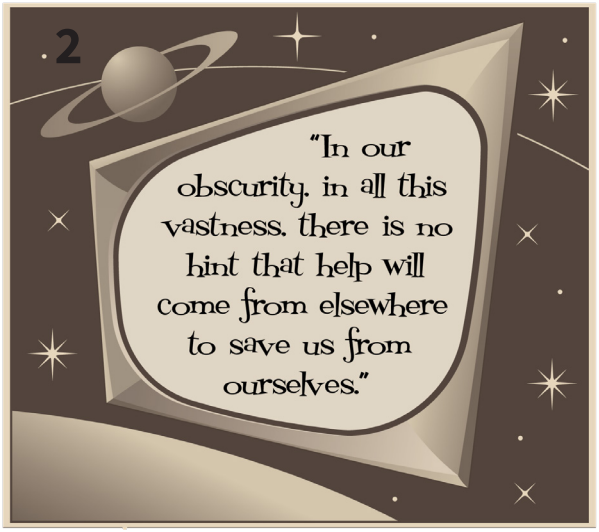
> The future of exploration requires stripping the enterprise of its ego, its colonial cruelties, its compulsions to name and claim.

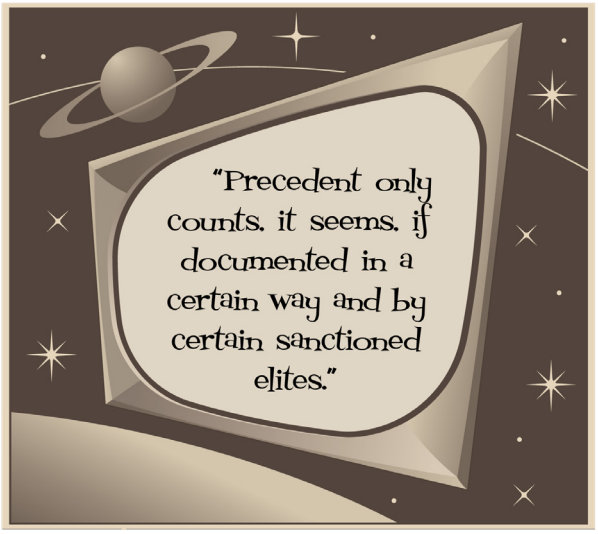
Which example best illustrates the author's argument that traditional exploration is driven by ego?

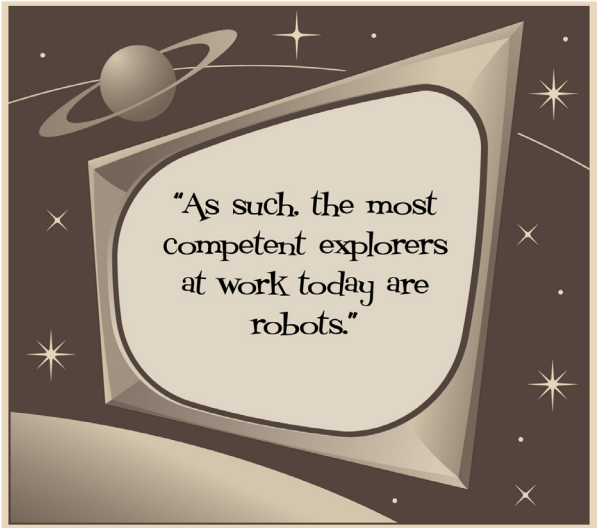


Question B-15 (1 point)

Which quotation from The *Walrus* article most closely corresponds with the NASA infographic on the future of space exploration?







Essential Question

To what extent does the desire to explore and discover affect humans?

Writing Pathway

Click on your preferred Writing Pathway to continue to the extended written response.

1

People have responsibilities as they explore and discover.

2

The urge to explore and discover reveals aspects of human nature.

Question B-16 (12 points)

1 Writing Pathway

People have responsibilities as they explore and discover.

- You must express yourself in an extended written format of your choice.
- You must communicate insights that demonstrate your creative, reflective, and/or critical thinking skills.
- You may refer to the texts, but you are not required to do so.

Suggested time: 25 minutes

Question B-16 (12 points)

2 Writing Pathway

The urge to explore and discover reveals aspects of human nature.

- You must express yourself in an extended written format of your choice.
- You must communicate insights that demonstrate your creative, reflective, and/or critical thinking skills.
- You may refer to the texts, but you are not required to do so.

Suggested time: 25 minutes

SELF-REFLECTION

Take a moment to reflect on your experience with the assessment.

Your feedback will provide valuable information to the assessment developers.

**This component is not scored and your responses will be confidential.*

Question 1

In order to get ready for this assessment, I…

(Select all that apply)

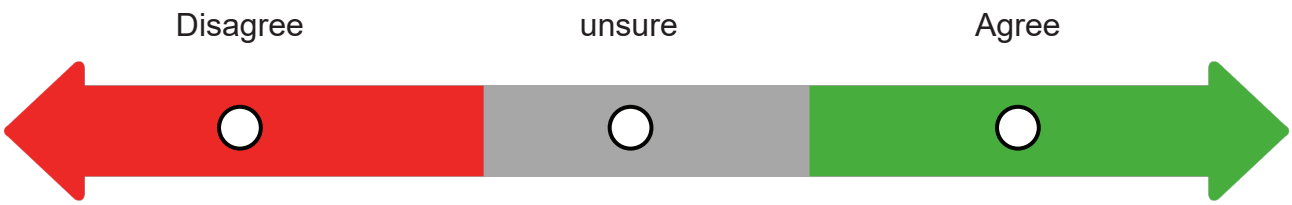
- ☐ prepared ahead of time in class.
- ☐ prepared with my peers.
- ☐ prepared on my own.
- ☐ did not prepared.
- ☐ Other

I prepared by...

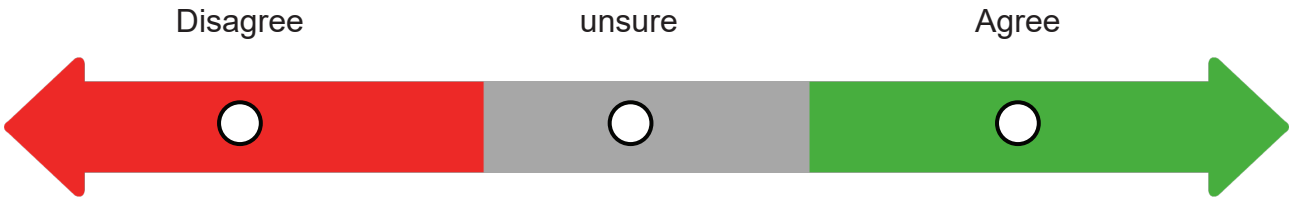
- ☐ doing the sample assessment.
- ☐ looking at online videos.
- ☐ looking at online scoring rubrics.
- ☐ looking at online student exemplars.
- ☐ Other

Question 2

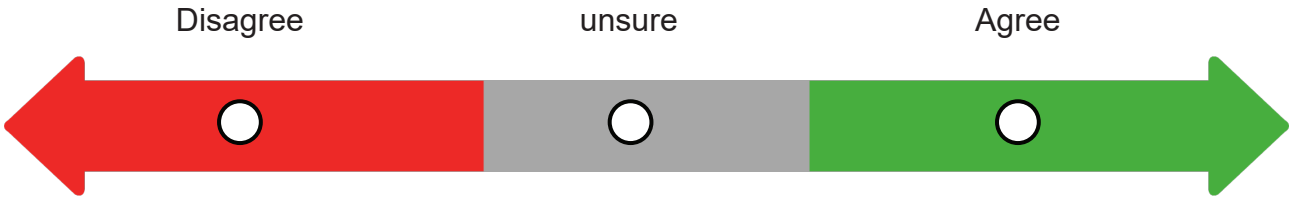
This assessment let me demonstrate my ability in literacy:



I was able to comprehend the texts:



I was able to communicate in writing:



Question 3

This assessment let me demonstrate the following competencies:

(Select all that apply)

- ☐ Critical and Reflective Thinking
- ☐ Creative Thinking
- ☐ Communication
- ☐ Positive Personal and Cultural Identity
- ☐ Personal Awareness and Responsibility
- ☐ Social Awareness and Responsibility

Question 4

I encountered challenges during this assessment.

- ○ Yes
- ○ No

The challenges I encountered on the assessment were with:

(Select all that apply)

- ☐ the texts.
- ☐ the online format.
- ☐ the length of time.
- ☐ the amount of writing.
- ☐ the overall difficulty.

Question 5

A key takeaway for me after completing this assessment is:

Question 6

Do you have any feedback or comments about the assessment?