Part 1: Speaking

Independent Speaking, Type A	Respond to a question from a professor.
Independent Speaking, Type B	Respond to a question from a professor.
Speaking on a Visual	Describe and discuss a diagram.
	Total time: 7–10 minutes

Part 2: Integrated Reading

Short Reading	Read a passage and answer questions.
Long Reading	Read a passage about an academic topic and answer questions.
Speaking on the Long Reading	Answer a question based on the academic reading.
	Total time: 35–50 minutes

Part 3: Integrated Listening

Short Listening	Listen to a presentation and answer questions.
Long Listening	Listen to a lecture about an academic topic and answer questions.
Speaking on the Long Listening	Answer a question about the academic lecture.
	Total time: 25–35 minutes

Part 4: Academic Unit A

Long Reading	Read a passage about an academic topic and answer questions.
Long Listening	Listen to a lecture about the same academic topic and answer questions.
Long Writing	Write a response to a question about ideas presented in the reading passage and the lecture.

Total time: 60–70 minutes

Part 5: Academic Unit B

Long Reading	Read a passage about an academic topic and answer questions.
Long Listening	Listen to a lecture about the same academic topic and answer questions.
Short Writing	Write a short response to a question about ideas presented in the reading passage or the lecture.

Total time: 40–45 minutes

Part 2: Long Reading

Time Remaining: **19 minutes**

NEXT

Very often, the discipline of engineering surprises the world with marvelous feats such as the longest bridges, tallest buildings, and most sophisticated space exploration technologies. Occasionally, it sinks people's hearts with unexpected failures and tragedies, like the explosion of *Space Shuttle Challenger*. In today's media-rich society, this type of sad story travels faster than ever as engineering accidents may be more eye-catching than celebrity news. Like other applied fields, engineering continues to build upon previous errors and mistakes. Taking the proverb "To err is human; to forgive, divine," Professor Henry Petroski titled his book *To Engineer is Human: The Role of Failure in Successful Designs* to highlight the truth that engineering failures happen; what matters most is to learn from them. The attention around engineering failures and disasters has brought new courses and professionals to the field, such as failure analysis and forensic engineers.

What are the common causes of engineering failures? A number of factors, including violation of codes of practice, miscommunication, extreme weather conditions during construction, or questionable engineering ethics, can come into play. Based on an analysis of 800 cases of structural failure before 1976, Miroslasv Matousek and Jörg Schneider, two researchers at the Swiss Federal Institute of Technology, found that human factors constituted the main causes of failure. These included carelessness, negligence, or unpreparedness. In a more recent study, George Sowers (an honorable member of the American Society of Civil Engineering), evaluated 500 failure cases in civil engineering to identify

← 1 2 3 4 5 →

1. Professor Henry Petroski is likely to be teaching which one of the following engineering courses?

- ○ Integrated Engineering
- ○ Material Engineering
- ○ Engineering Ethics
- ○ Environmental Engineering

2. What does the book title *To Engineer is Human* suggest?

- ○ the wisdom of the idiom
- ○ the tendency of making errors
- ○ the nature of engineering
- ○ the consequences of failures

Part 2: Long Reading

Time Remaining: **19 minutes**

NEXT

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Multiple-Choice

1. What is true of lab reports for this class?

- ○ They have an open format.
- ○ They should be physically handed in.
- ○ They follow APA citation style.
- ○ They require reading about the topic.

Multiple-Choice Multiple-Answer

5. According to the article, which of the following are some of the common causes of engineering failures? Choose 3.

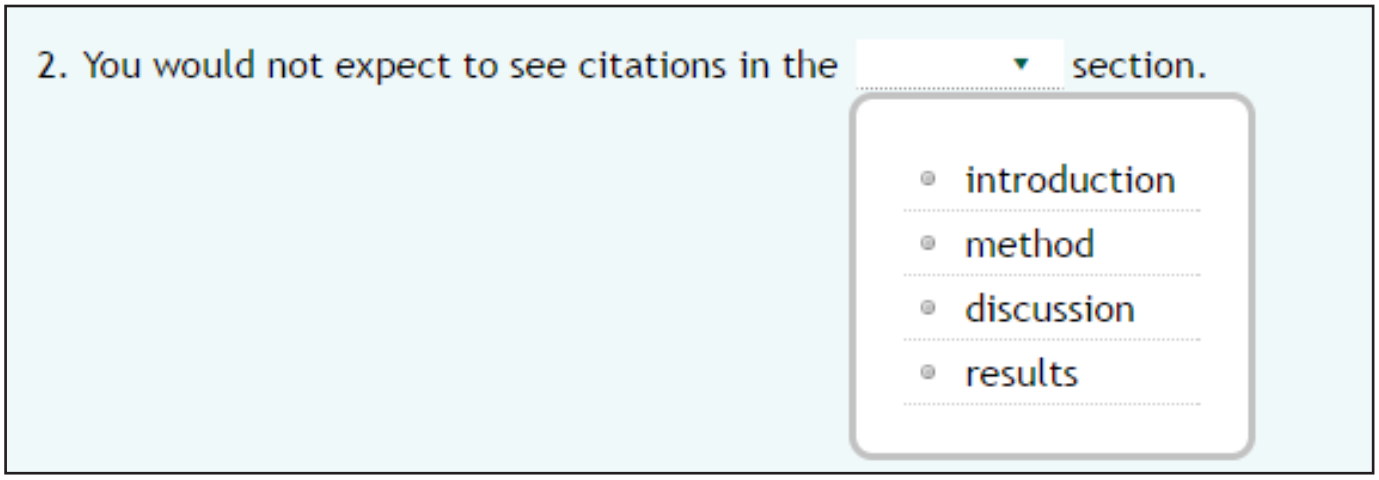
- ☐ poor weather at the construction site
- ☐ insufficient funding
- ☐ miscommunication between stakeholders
- ☐ unreliable building materials
- ☐ failure to comply with established codes of practice

Fill-in-the-Blank

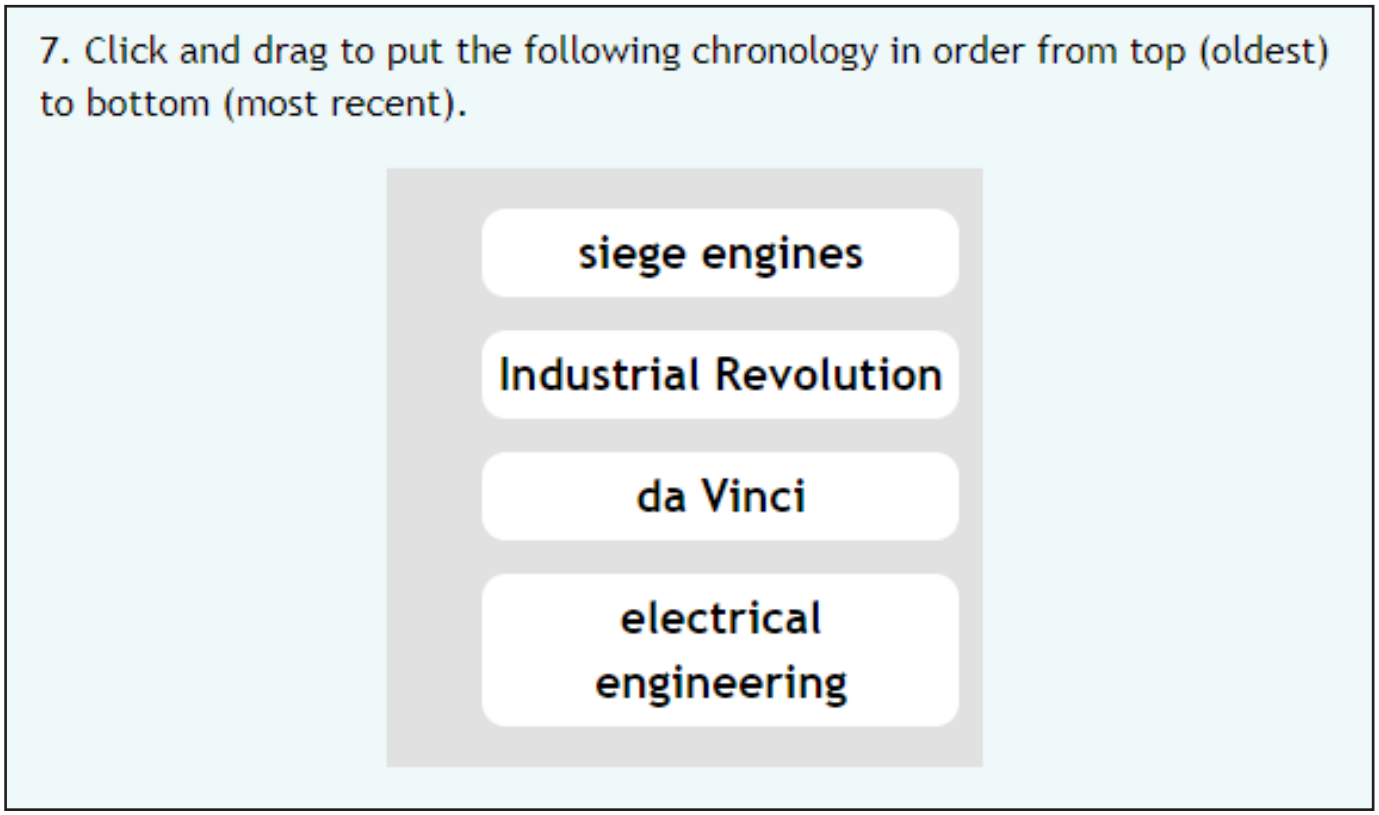
7. Fill in the blank with one number from the passage.

In George Sowers' study, [ ] % of engineering failures were found to be caused by human error.

Drop-down



Ordering



Matching

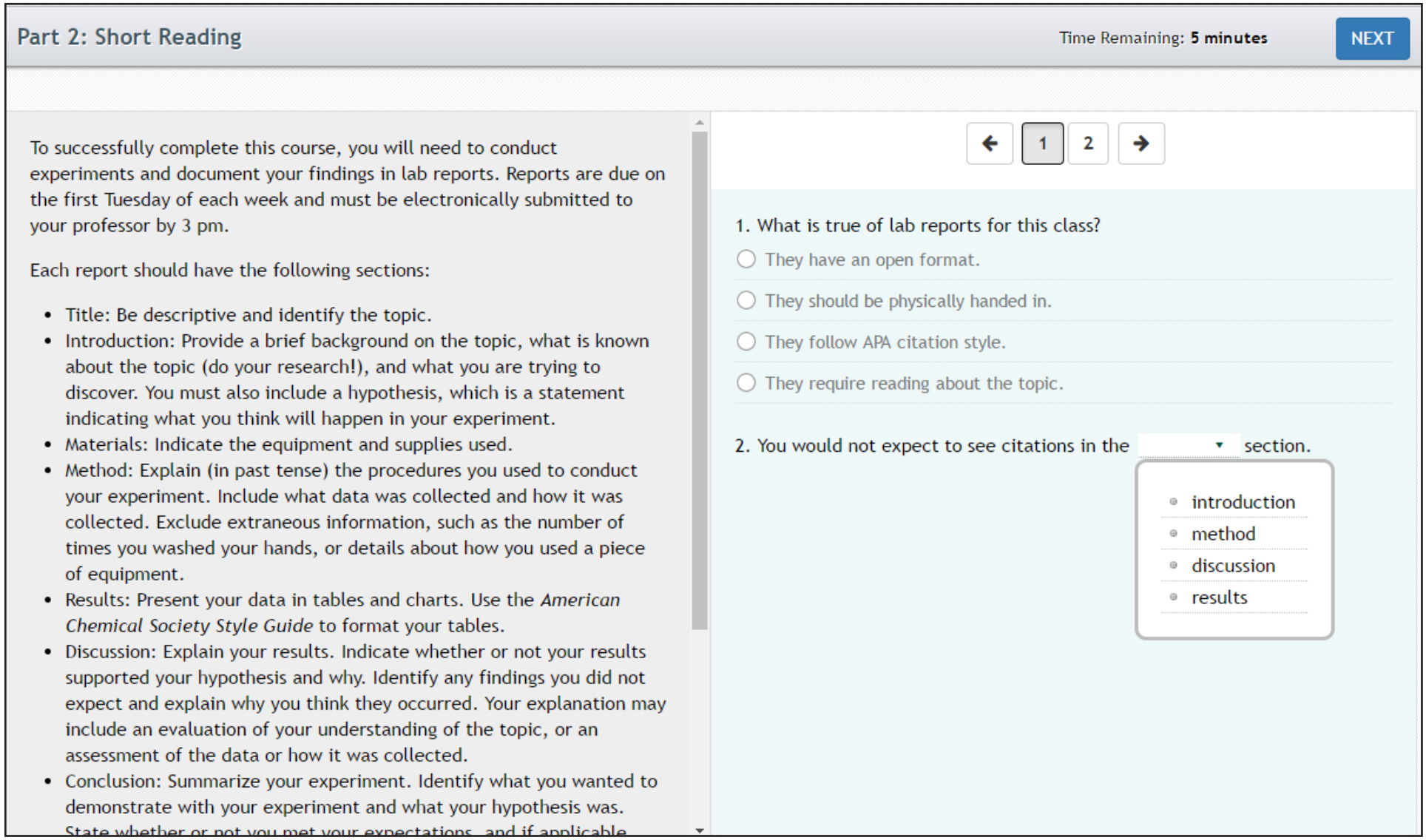
11. Match the following historical figures with their associated event.

Cyrus the Great | Xerxes | Alexander the Great

Defeated by the Greeks

Freed the Jewish people

Conquered the Persian Empire



Part 2: Short Reading

Time Remaining: **5 minutes**

NEXT

To successfully complete this course, you will need to conduct experiments and document your findings in lab reports. Reports are due on the first Tuesday of each week and must be electronically submitted to your professor by 3 pm.

Each report should have the following sections:

- Title: Be descriptive and identify the topic.
- Introduction: Provide a brief background on the topic, what is known about the topic (do your research!), and what you are trying to discover. You must also include a hypothesis, which is a statement indicating what you think will happen in your experiment.
- Materials: Indicate the equipment and supplies used.
- Method: Explain (in past tense) the procedures you used to conduct your experiment. Include what data was collected and how it was collected. Exclude extraneous information, such as the number of times you washed your hands, or details about how you used a piece of equipment.
- Results: Present your data in tables and charts. Use the *American Chemical Society Style Guide* to format your tables.
- Discussion: Explain your results. Indicate whether or not your results supported your hypothesis and why. Identify any findings you did not expect and explain why you think they occurred. Your explanation may include an evaluation of your understanding of the topic, or an assessment of the data or how it was collected.
- Conclusion: Summarize your experiment. Identify what you wanted to demonstrate with your experiment and what your hypothesis was. State whether or not you met your expectations, and if applicable

1 2

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- ○ They have an open format.
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- ○ They follow APA citation style.
- ○ They require reading about the topic.

2. You would not expect to see citations in the ▾ section.

- introduction
- method
- discussion
- results

Precious stones draw their value from their spotless appearance; however, there are a lot of very convincing fake gems in circulation. It often takes a highly experienced gem dealer—or specialized equipment—to identify the imperfections that mark an **ersatz** diamond.

What does "ersatz" mean?

- O expensive
- O unique
- O artificial
- O stolen

Part 4: Long Reading

Time Remaining: **19 minutes**

NEXT

liberation is the decree that released Jewish people from captivity in Babylon and allowed them to return to their homeland.

In 547 BCE, Cyrus conquered the Greek territories of Ionia and appointed Persian rulers. This conquest would lead to the future conflicts known as the Greco-Persian Wars. Even though Persians were very tolerant of other religions and cultures, they implemented strong vertical governmental control. Greeks, on the other hand, valued their independent city states and horizontal structure. This ultimately led to decades of rebellions and battles for control.

In 480 and 479 BCE the Greeks won decisive victories over the presiding emperor, Xerxes, pushing the Persians to retreat. Such conflicts were not unusual in ancient times. From the Persian perspective, it was just one of the events in the history of the empire. However, when Greece emerged as a cultural and philosophical centre of Europe, the conflict was given more significance in European history. It is not impossible to imagine that the strife between Europe and the Middle East in the Middle Ages was heavily influenced by earlier accounts and perceptions of the Greek historians.

Legacy of the Empire

After around 200 years of prosperous development, the Persian Empire was conquered by Alexander the Great in 330 BCE. Even though Alexander's invasion separated the Persian Empire into multiple, smaller states, each of them retained many of their political and cultural traits.

The Achaemenid Empire had a huge, often understated impact on the

← 1 2 3 4 5 →

7. In Paragraph 6, what does the word "strife" in the phrase "the strife between Europe and the Middle East" refer to?

- ○ trade
- ○ conflict
- ○ treaty
- ○ negotiation

8. Which of the following reflects the Persian Empire's states after Alexander's invasion?

- ○ They entered a long period of prosperity.
- ○ They kept their individual cultures.
- ○ They were unified under the Persian Empire.
- ○ They lost their political identities.

1) General Meaning

- This is the ability to comprehend the general meaning of a passage of text.
- These questions focus on the broad ideas in the text that cannot be determined from a single sentence.

2) Specific Information

- This is the ability to identify specific information in a passage of text.
- These questions focus on understanding specific details in a passage, such as key information, supporting details, opinions, or examples.

3) Inference

- This is the ability to make inferences based on information in the passage.
- These questions focus on drawing conclusions and making assumptions based on information in the text.

Part 4: Long Reading

Time Remaining: **19 minutes**

NEXT

and glory, the population of the Persian Empire reached around 50 million people.

Cyrus is remembered for his unique political approaches to the conquered territories. He tried to manage multiple ethnicities, cultures, and religions all under one empire. Cyrus did not interfere with local customs, religions, trade, and business practices. The emperor presented himself as the "saviour" of the conquered territories. The most famous case of such liberation is the decree that released Jewish people from captivity in Babylon and allowed them to return to their homeland.

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1 2 3 4 5

1. According to the passage, Persians were viewed as "the other" in history because of ▾ .

2. Cyrus is regarded as the ▾ of the First Persian Empire.

3. Which phrase best describes Cyrus's political approach?

- ○ treating the conquered with respect
- ○ promoting Persian value systems
- ○ securing borders with walls
- ○ focusing on political development

Part 4: Long Reading

Time Remaining: **19 minutes**

NEXT

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The Achaemenid Empire had a huge, often understated impact on the cultural development of the world. Persian art and architecture incorporate a number of styles—Median, Assyrian, and Greek—creating a

1 2 3 4 5

- [ ] a trigger of consequential invasion
- [ ] a province inhabited by Persians
- [ ] an example of political differences
- [ ] a source of ancient culture

5. According to the passage, what was the main cause for the Ionian Revolt?

- ( ) economic inequality
- ( ) succession disagreement
- ( ) political organization
- ( ) cultural tension

6. Fill in the blank with one word from the passage.
Cyrus's conquests led to the _____ wars.

Part 2: Long Reading

Time Remaining: **19 minutes**

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