

CHAPTER 18

Toward a New World-View

STUDY-REVIEW EXERCISES

Define the following key concepts and terms.

Copernican hypothesis

Cartesian absolutism

§ law of inertia

§ Aristotelian world-view

empirical method

deductive reasoning

rationalism

§ general will

secular

skepticism

tabula rasa

§ *Parlement of Paris*

Enlightenment

enlightened absolutism

philosophes

Identify and explain the significance of each of the following people.

Diderot

§ Bayle

Kepler

Galileo

Bacon

Descartes

§ D'Holbach

Newton

Montesquieu

Voltaire

Copernicus

Brahe

§ Madame du Chatelet

Madame Geoffrin

Catherine the Great

Frederick the Great

Maria Theresa

§ Louis XV

Joseph II

Explain the new ideas of each the following books. What were some of the consequences of these ideas?

On the Revolutions of Heavenly Spheres

§ *New Astronomy or Celestial Physics*

§ *Two New Sciences*

Principia

Conversations on the Plurality of Worlds of 1686

§ *Historical and Critical Dictionary*

The Spirit of the Laws

Essay Concerning Human Understanding

Philosophical Dictionary

Encyclopedia: The Rational Dictionary of the Sciences, the Arts, and the Crafts

The Social Contract

REVIEW QUESTIONS

Check your understanding of this chapter by answering the following questions.

1. Contrast the old Aristotelian-medieval world-view with that of the sixteenth and seventeenth centuries. What were the contributions of Copernicus, Brahe, Kepler, Galileo, and Newton? What is meant by Newton's "synthesis"?
2. How did the new scientific theory and discoveries alter the concept of God and religion? Did science, in fact, come to dictate humanity's concept of God?
3. What were the scientific and religious implications of Copernicus's theory?
4. Discuss the origins and the momentum of the scientific revolution in terms of (a) its own "internal logic" and (b) external and nonscientific causes.
5. How did Bacon and Descartes contribute to the development of the modern scientific method?
6. Did the Catholic and Protestant churches retard or foster scientific investigation? Explain.
7. What were the consequences of the rise of modern science?

8. What were the central concepts of the Enlightenment?
9. Who were the *philosophes* and what did they believe?
10. In what ways were Frederick of Prussia and Catherine of Russia enlightened monarchs?
11. Describe the goals and accomplishments of Frederick the Great.
12. What was the effect of Catherine's reign on (a) the Russian nobility, (b) the Russian serfs, and (c) the position of Russia in the European balance of power?
13. What was the cause of the power struggle between the aristocrats and Louis XV of France?
14. Describe the interests and actions of Madame du Chatelet and Madame Geoffrin.

Test your understanding of the chapter by providing the correct answers.

1. According to Aristotle, the sublunar world was made up of four elements: air, fire, earth and _____ .
2. Copernicus *did/did not* attempt to disprove the existence of God.
3. Galileo claimed that *motion/rest is* the natural state of all objects.
4. The key feature in Newton's synthesis was the law of _____ .
5. In the medieval universities, science emerged as a branch of _____ .
6. The method of finding latitude came out of study and experimentation in the country of _____ .
7. The idea of "progress" *was/was not* widespread in the Middle Ages.
8. In the seventeenth and eighteenth centuries a close link between pure (theoretical) science and applied technology *did/did not* exist.
9. A _____ is one who believes that nothing can ever be known beyond all doubt.

10. Voltaire believed that was history's greatest man because he used his genius to benefit humanity.

11. Overall, Joseph II of Austria *succeeded/failed* as an enlightened monarch.

Place the following ideas in correct chronological order.

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|--|----|
| Copernicus's idea that the sun is the center of the universe | 1. |
| Montesquieu's theory of the separation of powers | 2. |
| D'Holbach's theory that human beings are machines | 3. |
| Aristotle's view of a motionless earth at the center of the universe | 4. |
| Newton's law of universal gravitation | 5. |

Major Political Ideas

1. Describe the concept of enlightened absolutism in terms of its political and legal goals. Did it work? What was the response of the aristocracy to this political concept?

2. This chapter emphasizes the difference between a secular and religious view of the world. What is meant by *secular* and what effect did a secular world-view have on political loyalties?

Issues for Essays and Discussion

In the course of the eighteenth century the basic outlook on life and society held by many men and women changed dramatically. In what ways did this transformation affect scientific, political, religious, social, and economic thought? In working out your argument explain how specific new scientific ideas and methods of reasoning led directly to new political and social ideas.

Interpretation of Visual Sources



Study the print of Descartes' visit with Queen Christina of Sweden. Write a paragraph on how this print illustrates the relationship between science and politics. Did the scientific revolution have a great effect on how rulers ran their states? Why were some monarchs interested in science? Does this print give any clues?

Geography

Why did Poland “disappear” between 1772 and 1795? Compare Map 18.1 to Map 17.2. Describe what the “partition of Poland” was, when it took place, why, and who benefited.

