

## Period 14 Exercise Answers

**E.1** A procedure that may be used to determine whether or not a system is sensitive is to observe two models of the system with very similar initial conditions. The system is sensitive if which of the following is TRUE?

- a) Both models behave identically after some time.
- b) Both models behave very differently after some time.
- c) Both models have many moving parts.
- d) Both models behave predictably.
- e) The system can be simulated by a computer program.

**E.1 = b**

**E.2** Which of the following statements regarding computer simulations is TRUE?

- a) Computer simulations are unbiased.
- b) Computer simulations can handle fewer calculations than a human could.
- c) Computer simulations are more complicated than the actual situation.
- d) Computer simulations can be used to model situations that have many parts to them.
- e) Computer simulations can always be used to make very accurate predictions.

**E.2 = d**

**E.3** How well a computer simulation can predict the future behavior of a physical system can depend on

- a) the reliability of the data describing the system.
- b) whether the system can be represented by a mathematical model.
- c) whether the physical system can be described well by a finite number of variables.
- d) how well the model of the system represents the system.
- e) ALL of the above factors can influence the accuracy of the simulation.

**E.3 = e**

**E.4** In the computer game "Balance of the Planet," which of the following is NOT a likely result of increasing the pesticide tax?

- a) the use of pesticides increases
- b) the use of pesticides decreases
- c) water quality improves
- d) crop yields decrease
- e) world starvation increases

**E.4 = a**

**E.5** In the computer game "Balance of the Planet," what is likely to happen if the beef tax is decreased?

- a) more beef is consumed
- b) world starvation decreases
- c) world starvation increases
- d) Both a) and b) are correct.
- e) Both a) and c) are correct.

**E.5 = e**

## Period 14 Answers

**E.1 = a**

**E.2 = d**

**E.3 = e**

**E.4 = c**

**E.5 = e**