
PESTICIDE SPILL MODULE
Background Activities Final Test

1. Which of the following best describes the scientific principle behind the operation of a piston pump?
 - A. Increasing the volume increases the pressure.
 - B. Decreasing the volume increases the pressure.
 - C. Increasing the temperature increases the pressure.
 - D. Decreasing the temperature increases the pressure.

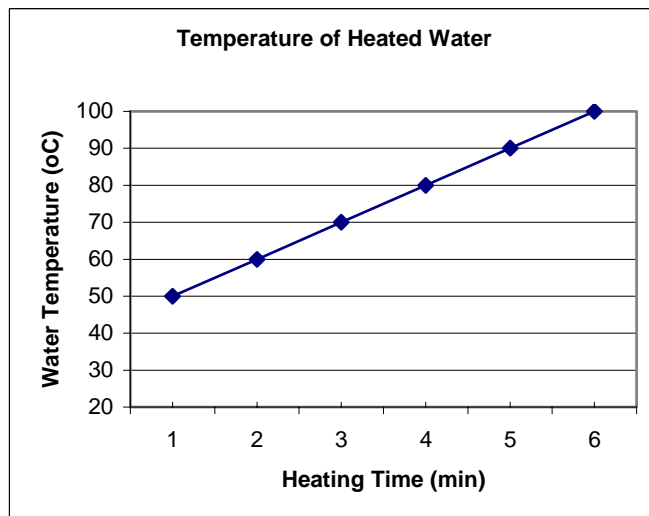
2. How does a Supersoaker differ from a simple piston pump?
 - A. It uses one-way valves.
 - B. It doesn't have a piston.
 - C. It squirts through a nozzle.
 - D. It builds up air pressure in the water reservoir.

3. Which of the following does NOT increase the distance the water will squirt from a piston pump?
 - A. Decreasing the size of the nozzle.
 - B. Increasing the number of slides of the piston.
 - C. Removing the one-way valves.
 - D. Varying the water in the reservoir.

Refer to the chart below to answer the following questions.

4. How long will it take to heat the water to 90° C?
 - A. 4.5 minutes
 - B. 5.0 minutes
 - C. 5.5 minutes
 - D. 6.0 minutes

5. What is the water temperature after 2 ½ minutes of heating?
 - A. 60° C
 - B. 61° C
 - C. 65° C
 - D. 70° C

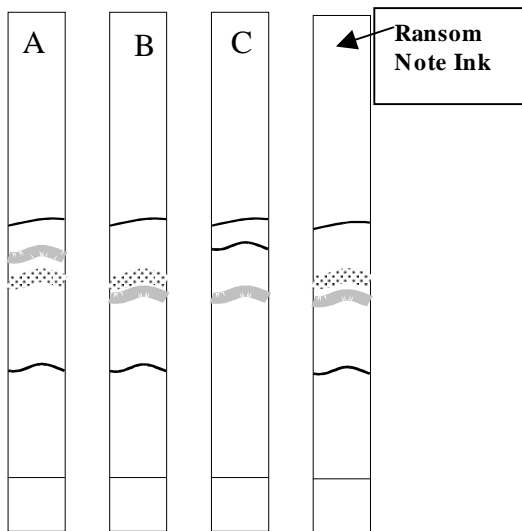


6. Standards are useful because
- A. they use known data to help determine unknown values.
 - B. each graph is different.
 - C. every graph can be the same.
 - D. they provides source of experimental data.
7. The retention factor for Band #1 can be calculated as follows:

CRIME SCENE INK

Band #	Distance Traveled by Band (mm)	Distance Traveled by Solvent (mm)
1	25	100

- A. $R_f = 1/100$
 - B. $R_f = 25/100$
 - C. $R_f = 100/25$
 - D. $R_f = 25/75$
8. Look at the chromatograms below. Which pen was likely to have been used to write the ransom note?
- A. Pen A
 - B. Pen B
 - C. Pen C
 - D. None of the inks match the ransom note



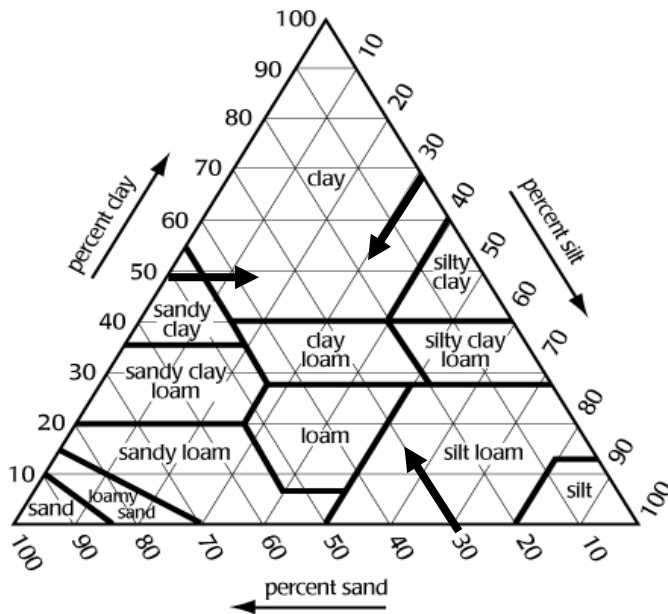
9. Chromatography is a useful analytical tool because

- A. it identifies who committed a crime.
- B. it indicates what dyes are in inks.
- C. it is colorful.
- D. it separates mixtures of compounds into separate components.

10. Use the soil triangle below to identify the following soil type:

Sand	Silt	Clay
40%	30%	30%

- A. Loam
- B. Clay loam
- C. Sandy clay loam
- D. Sandy loam



11. Use the soil triangle to determine which answer is correct. A soil that is identified as *sandy loam* would be composed of

- A. 10% sand, 10% silt, 80% clay
- B. 30% sand, 55% silt, 15% clay
- C. 65% sand, 25% silt, 10% clay
- D. 50% sand, 10% silt, 40% clay

12. Soil is made up primarily of

- A. Organic Matter
- B. Air
- C. Mineral matter: sand, silt, clay and nutrients
- D. Water

13. Which type of soil has the highest permeability?

- A. Sand
- B. Silt
- C. Clay
- D. Loam
- E. Clay loam

14. The rate of permeability of water through soil is based on a soil particle's _____ .

- A. Shape
- B. Chemical composition
- C. Color
- D. Size

15. Which soil has the highest water holding capacity?

- A. Sand
- B. Silt
- C. Clay
- D. Loam
- E. Clay loam

16. The reaction that a population of radish seeds has to a chemical is known as the

- A. Frequency
- B. Exposure
- C. Response
- D. Dose

17. Which of these is composed of a chemical or chemicals?

- A. Water
- B. Hydrochloric acid
- C. An human being
- D. All of the above

18. From a dose-response curve, you can determine
- A. the dose level below which there are no adverse effects to exposure to a chemical.
 - B. the dose level at which 100% of the study population will die.
 - C. the dose at which 50% of a study population will die.
 - D. All of the above
19. In the toxicity testing experiment, why do you think you need one trial that uses only water (0% concentration of the chemical being tested)?
- A. Students can see what happens to seeds that are not treated with a different chemical.
 - B. Students can observe if water is toxic.
 - C. The experiment needs to have a control.
 - D. There need to be more than 5 experimental trials.
20. A risk that people are forced to take whether they want to or not is
- A. A common risk.
 - B. An involuntary risk.
 - C. An unknown risk.
 - D. A highly probable risk.
21. Which of the following **best** defines the meaning of "risk"?
- A. To take unnecessary chances.
 - B. The level of acceptable harm from a hazard that people are willing to tolerate.
 - C. The probability that harm will occur as a result of exposure to a hazard.
 - D. The number of deaths that occur each year from a hazard.
22. Which of the following **best** explains why people might perceive the risks of nuclear power plants to be greater than the risks of bicycles?
- A. Scientists know more about bicycles than they do about nuclear power plants.
 - B. Death by drowning is fairly common and people aren't very afraid of it.
 - C. People believe they have greater control over their exposure to harm from bicycles than nuclear power plants.
 - D. Not very many people ride bicycles.
23. Arturo is thinking about what to do after he graduates from high school, and is making a Decision Chart. The different things he could do are
- A. Probabilities
 - B. Goals
 - C. Solutions or actions
 - D. None of the above

24. Ratings on a decision chart can be based on
- A. Statistical analysis
 - B. Value judgments
 - C. Cost / benefit analysis
 - D. All of the above
25. A local community was concerned about the number of head injuries suffered by bicyclists and found that a law requiring cyclists to wear helmets was an inexpensive and effective way to reduce cycling injuries. Their decision to enact a helmet law was based on
- A. Subjective ethical considerations.
 - B. A risk assessment.
 - C. Solutions or actions acceptable to the community.
 - D. A cost/benefit analysis.
26. A small community is trying to decide the best location for a new park. After an hour of "brainstorming", the park committee has come up with a list of things that it would like to have in a new park. In deciding which location would be best, this list would serve as the
- A. Decision options.
 - B. Criteria for evaluation.
 - C. Ethical considerations.
 - D. Cost/benefit analysis.
27. You are part of a community group that is considering three possible locations for a municipal waste processing facility. The community is concerned about potential water pollution problems. To compare the three possible locations in terms of water run-off you would use a
- A. Plan view map of the community.
 - B. Topographical map.
 - C. T-Chart.
 - D. Decision protocol.
28. A decision made according to consensus means that
- A. Everyone agrees on one alternative.
 - B. An agreement cannot be reached and the decision is made by someone else.
 - C. The majority of people are in favor of one alternative.
 - D. The two best alternatives are selected and voted on.