

**Quarreling Scientists.** Analyze data in Table 2 below and read the corresponding viewpoints of scientists to answer the questions below.

**Table 2**

	Ounces of fluid consumed per work day	Ounces (oz.) of urine filtered out of blood by diffusion in the nephrons of the kidneys	Average air temperature at work site
Outdoor construction worker in July	72	12	88°F
Dental hygienist	12	72	65°F
Semi-truck driver	36	36	70°F

Scientist 1 hypothesizes the reason the construction worker has the lowest urine output is because the fluids consumed primarily is excreted through sweat. Scientist 1 believes the pattern is reversed in the dental hygienist due to possible pregnancy and/or the amount of coffee consumed before the start of the work day. Scientist 1 believes the urine output excreted for the semi-truck driver is normal for the amount consumed.

Scientist 2 also believes the construction worker excreted most of his/her ingested fluids through sweat. Scientist 2 hypothesizes the dental hygienist has a bladder infection, which explains the high urine output in relation to the lower amount of fluids consumed. Scientist 2 also believes the urine output excreted for the semi-truck driver is normal for the amount consumed.

Scientist 3 believes the construction worker has medication issues. Scientist 3 believes the dental hygienist consumes a lot of fluids the evenings and at night, which causes a lag of polyuria (frequent urination) effect the following work day. Scientist 3 also believes the urine output excreted for the semi-truck driver is normal for the amount consumed.

- Which scientist(s) believe the semi-truck driver's urine output is normal?
  - a) 1 only
  - b) 3 only
  - c) 2 and 3 only
  - d) All three
- Which scientist(s) believe the construction worker's low urine output is due to sweat?
  - a) 1 only
  - b) 2 only
  - c) 1 and 2 only
  - d) All three
- How many scientists believe the dental hygienist's data is attributed to a bladder infection?
  - a) 1
  - b) 2
  - c) 3
  - d) None of them
- In which work setting is the average worker likely to consume the most fluids on a daily basis?
  - a) Construction site
  - b) Cab of a semi-truck
  - c) Dentist's office
  - d) a & b equally
- If both sweat cells lining sweat glands purge sweat droplets and cells in our body lose urine droplets through excretion, then both processes are a form of \_\_\_\_\_ transport requiring ATP energy.
  - a) Passive
  - b) Active
  - c) Facilitated diffusion
  - d) Secretion