Test-Taking Style

Maximizing Your Mental Game:

The key to maintaining your engagement is to ______.

Four key ways to accomplish this:

- 1. 2. 3.
- 4.

Take ______ as often as needed, but everyone should take at least one (remember, the EOC test is untimed).

Take a few laps through the test:

First lap:			
C			

Second lap:	
• •	

Use the _____ feature: do not feel like you have to take the test sequentially.

Answer choices

You will never have the same answer ______times in a row.

Guessing? Use the letter _____

Test-Taking Strategies

When Looking at a Graph, read:

- 1. _____
- 2. _____
- 3. _____
- 4. _____



Figure 1



Figure 2



Be Answercentric



If the graph above represents the population growth for a certain breed of animal, then which of the following is the rate of change of the line graphed above?

A) -2
B)
$$-\frac{1}{2}$$

C) $\frac{1}{2}$
D) 2



Which of the following equations represents the graph shown above?

A. $y = 4^{x} - 2$ B. $y = 3^{x} - 2$ C. $y = 3^{x} - 1$ D. $y = 4^{x} - 1$

Reading Techniques

Be sure to read each problem _____. Don't burn through it!

Marshawn is a large animal veterinarian and charges \$1000 per month to take care of the horses on any farm, which includes up to 14 horses, and each additional horse carries an additional fee of \$70 per month. If a ranch hires Marshawn and the three owners decide to evenly split the cost of his services, which of the following expressions best represents the monthly cost for each business owner if Marshawn takes care of x horses that month (note: $x \ge 14$)?

A)
$$\frac{70x+1000}{3}$$

B) $\frac{70(x-14)+1000}{3}$
C) 210x + 3000
D) $\frac{14(70x+1000)}{3}$

Is Your Answer Reasonable?

Jerome is a MRI technician at a local hospital. Each week, he has a certain number of patients in need of MRI imaging. The number of patients he has left at the end of each day can be estimated with the equation P(d) = 36 - 8d, where P is the number of patients left and d is the number of days he has worked that week. What is the meaning of the value 36 in this equation?

A) It will take Jerome 36 days to see each patient.

B) Jerome starts each week with 36 patients to see.

C) Jerome sees 36 patients per hour.

D) Jerome sees 36 patients per day.

H(a) = 3a + 28.6

A pediatrician uses the model above to estimate the height h of a boy, in inches, in terms of the boy's age a, in years, between the ages of 2 and 5. Based on the model, what is the estimated increase, in inches, of a boy's height each year?

- A) 3
- B) 5.7
- C) 9.5
- D) 14.3

Question Wording

"...most effectively ... "

"...least likely ... "

"...provides the best evidence..."

In reading a question, be sure to ______ it, just as you would translate anything written in a foreign language.

- 1. Data in the graph provide most direct support for which idea?
- 2. It can reasonably be inferred from the table that omnivorous animals prefer to eat under which circumstances?
- 3. The differences between the cell structures of plant and animal cells can most likely be attributed to which of the following?
- 4. Which of the following best illustrates the relationship between atmospheric carbon dioxide and ocean acidification?
- 5. Which of the following most accurately describes the relationship between the data shown in the graph?
- 6. Which of the following graphs best support the conclusion that plants grow best when daytime temperature are between 10 – 15 degrees higher than nighttime temperatures?
- 7. All of the following are possible solutions to the system of equations EXCEPT:
- 8. If a botanist wishes to replicate this experiment at a higher altitude, which variable should the botanist adjust to account for a potential change in atmospheric oxygen saturation?
- 9. Of the species listed below, which is NOT a primary consumer?

Let's Work an Example Passage/Questions

Passage I

Researchers studied how diet and the ability to smell food can affect the life span of normal fruit flies (Strain N) and fruit flies unable to detect many odors (Strain X).

Study 1

Three tubes (Tubes 1–3), each with 15% sugar yeast (SY) medium (a diet with 15% sugar and 15% killed yeast), were prepared. Then, 200 virgin female Strain N fruit flies less than 24 hr old were added to each tube. No additional substance was added to Tube 1. Additional odors from live yeast were added to Tube 2, and live yeast was added to Tube 3. The percent of fruit flies alive was determined every 5 days for 75 days (see Figure 1).



Figure 1

Study 2

Three tubes (Tubes 4–6), each with 5% SY medium (a diet with 5% sugar and 5% killed yeast), were prepared. Then, 200 virgin female Strain N fruit flies less than 24 hr old were added to each tube. No additional substance was added to Tube 4. Additional odors from live yeast were added to Tube 5, and live yeast was added to Tube 6. The percent of fruit flies alive was determined every 5 days for 75 days (see Figure 2).



Figure 2

Study 3

Strain N fruit flies were modified to produce Strain X fruit flies. Strain X fruit flies lack Or83b (a protein required to detect a wide range of odors); therefore, they cannot detect many odors. The average life span was determined for virgin female Strain N and virgin female Strain X fruit flies fed with various SY media (see Table 1).

	Tab	le 1		
	SY m	A.v.ara a.a		
Strain	% sugar	% killed yeast	life span (days)	
Strain N	3 5 7.5 10 15	3 5 7.5 10 15	50.1 50.1 43.9 44.8 41.6	
Strain X	3 5 7.5 10 15	3 5 7.5 10 15	61.6 62.5 58.9 58.6 55.6	

Table and figures adapted from Sergiy Libert et al., "Regulation of Drosophila Life Span by Olfaction and Food-Derived Odors." ©2007 by the American Association for the Advancement of Science.

- 1. In which of Studies 1 and 2 did some of the fruit flies live for more than 75 days, and what diet were those fruit flies fed?
 - A. Study 1; 5% SY medium

 - B. Study 1; 15% SY medium
 C. Study 2; 5% SY medium
 D. Study 2; 15% SY medium
- 2. During Studies 1 and 2, why did the size of the fruit fly population in each tube decrease rather than increase?
 - The birthrate was 0, because the initial population contained only males.
 - G. The birthrate was 0, because the initial population contained only virgin females.
 - The death rate was 0, because the initial population contained only males.
 - The death rate was 0, because the initial popula-J. tion contained only virgin females.

- 3. Study 1 differed from Study 2 in which of the following ways?
 - A. Female fruit flies were tested in Study 1, whereas male fruit flies were tested in Study 2.
 - B. Male fruit flies were tested in Study 1, whereas female fruit flies were tested in Study 2.
 - C. The SY medium tested in Study 1 contained a lower percent of sugar than did the SY medium tested in Study 2. The SY medium tested in Study 1 contained a
 - D. higher percent of sugar than did the SY medium tested in Study 2.
- 4. Suppose that an additional trial in Study 3 had been performed using a 12% SY medium (a diet with 12% sugar and 12% killed yeast). The average life span of the Strain X fruit flies in this trial would most likely have been:
 - F. less than 55.6 days.
 - G. between 55.6 days and 58.6 days.
 - H. between 58.6 days and 61.6 days.
 - J. greater than 61.6 days.
- 5. The researchers had predicted that decreasing a fruit fly's ability to detect odors would increase its life span. Are the results of Study 3 consistent with this prediction?
 - A. No; for each SY medium tested, the average life span of Strain X fruit flies was longer than the average life span of Strain N fruit flies.
 - No; for each SY medium tested, the average life В. span of Strain N fruit flies was longer than the average life span of Strain X fruit flies.
 - C. Yes; for each SY medium tested, the average life span of Strain X fruit flies was longer than the average life span of Strain N fruit flies.
 - Yes; for each SY medium tested, the average life D. span of Strain N fruit flies was longer than the average life span of Strain X fruit flies.
- 6. Suppose the researchers wanted to determine whether a defect in the ability to detect odors would change the life span of fruit flies fed 15% SY medium when live yeast is added to the diet or when additional odors from live yeast are added to the diet. Which of the following experiments should be performed?
 - F. Repeat Study 1 except with Strain X fruit flies
 - Repeat Study 1 except with Strain N fruit flies G
 - H. Repeat Study 2 except with Strain X fruit flies
 - Repeat Study 2 except with Strain N fruit flies J.
- 7. The results for which 2 tubes should be compared to determine how a reduced calorie diet affects life span in the absence of live yeast and additional odors from live yeast?
 - A. Tube 1 and Tube 4
 - Β. Tube 1 and Tube 2
 - Tube 2 and Tube 5 C.
 - D. Tube 5 and Tube 6

Time Permitting (You Try):

Passage IV

The chemical reactions associated with photosynthesis can be summarized with the following chemical equation:

$$6 \operatorname{CO}_2 + 12 \operatorname{H}_2\operatorname{O} + \operatorname{energy} \rightarrow \operatorname{C_6H_{12}O_6} + 6 \operatorname{O_2} + 6 \operatorname{H_2O}$$

Table 1 lists wavelength ranges for visible light and the color frequently associated with each range.

able 1
Wavelength (nm)
380-430
430-500
500-565
565-585
585-630
630-750

Table 1 adapted from Neil A. Campbell, Jane B. Reece, and Lawrence G. Mitchell, *Biology*, 5th ed. ©1999 by Benjamin/Cummings.

Figure 2 shows the average rate of photosynthesis at various wavelengths as a percent of the average rate of photosynthesis at 670 nm.



Figure 2

Figures 1 and 2 adapted from Peter H. Raven, Ray F. Evert, and Susan E. Eichhorn, *Biology of Plants*, 4th ed. ©1986 by Worth Pub-

Figure 1 shows the relative absorption of light by chlorophyll a and chlorophyll b versus the wavelength of light from 400 nm to 750 nm.





- **18.** In eukaryotic organisms, the chemical reactions associated with the chemical equation shown in the passage typically occur within which of the following structures?
 - F. Chloroplasts
 - G. Mitochondria
 - H. Lysosomes
 - J. Nuclei
- **19.** In Figure 2, at which of the following wavelengths does the rate of photosynthesis exceed the rate of photosynthesis at 670 nm ?

Α.	400	nm

- **B.** 430 nm
- C. 630 nm
- **D.** 700 nm

- 17. Based on Table 1 and Figure 1, which color of light is associated with the wavelength of light that results in the greatest absorption by chlorophyll b ?
 A. Blue
 B. Green
 - C. Yellow
 - D. Red

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- **20.** In the chemical equation shown in the passage, the carbon in CO_2 becomes part of which of the following types of molecules?
 - F. Fat
 - G. Sugar
 - H. Protein
 - J. Nucleic acid
- **21.** Which of the following conclusions is best supported by Figures 1 and 2 ? The wavelength that results in the highest rate of photosynthesis also results in the:
 - A. lowest relative absorption by chlorophyll a.
 - **B.** lowest relative absorption by chlorophyll *b*.
 - C. highest relative absorption by chlorophyll a.
 - **D.** highest relative absorption by chlorophyll *b*.

Exponential Growth/Decay Amongst Populations

$$D(t) = 100 (1.08)^t$$

The function above models the number of dandelions, D(t), in a field *t* days after an initial count of the dandelions in the field was made on March 15th. Which of the following does 1.08 in the function represent?

- A) There were 1.08 dandelions in the field on March 15th.
- B) The dandelion population of the field grew by 1.08 each day.
- C) The dandelion population grew by a factor of 1.08 each day.
- D) It takes 1.08 days for the field's dandelion population to double.

A certain town had a population of 20,000 residents in 2005, and the town's population has declined by 6% annually since then. Which of the following functions models the population of the town, P(t), after *t* years?

- A) 20,000 (.06)^t
- B) 20,000 (.94)^t
- C) 20,000 (1.06)^t
- D) 20,000 (1.94)^t