

***HElghten™* Quantitative Literacy**

## Sample Items

VH228470

In 2014, the price of one share of Company X Stock increased by 25 percent from January 1 to February 1 and decreased by 20 percent from February 1 to March 1.

Quantity A

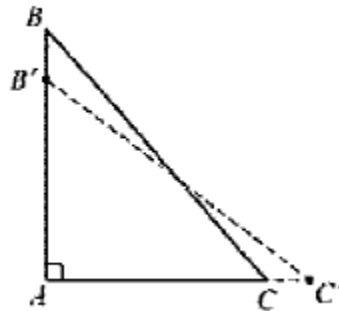
The price of one share of Company X stock on January 1, 2014 before the increase

Quantity B

The price of one share of Company X on March 1, 2014

- (A) Quantity A is greater.
- (B) Quantity B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.

VH220934



A triangular garden, represented by the triangle  $ABC$ , is redesigned into a garden represented by triangle  $AB'C'$ , as shown in the diagram. The change is made by increasing the length of  $AC$  by 20 percent to form  $AC'$  and decreasing the length of  $AB$  by 20 percent to form  $AB'$ .

Quantity A

The area of the original garden  $ABC$

Quantity B

The area of the redesigned garden  $AB'C'$

- (A) Quantity A is greater.
- (B) Quantity B is greater.
- (C) The two quantities are equal.
- (D) The relationship cannot be determined from the information given.

VH221975

In a certain company there are 22 employees. There are at least 8 employees age 40 or older and at most 12 employees with an age less than 40. Which of the following CANNOT be true regarding the 22 employees?

- (A) All the employees are age 40 or older.
- (B) There are exactly 8 employees with an age less than 40.
- (C) There are exactly 9 employees age 40 or older.
- (D) There are an equal number of employees age 40 or older and employees with an age less than 40.

VH221302

A board of length  $L$  feet is cut into two pieces such that the length of one piece is 1 foot more than twice the length of the other piece. Which of the following is the length, in feet, of the longer piece?

- (A)  $\frac{L - 1}{3}$
- (B)  $\frac{2L + 1}{2}$
- (C)  $\frac{2L + 1}{3}$
- (D)  $\frac{2L + 3}{3}$

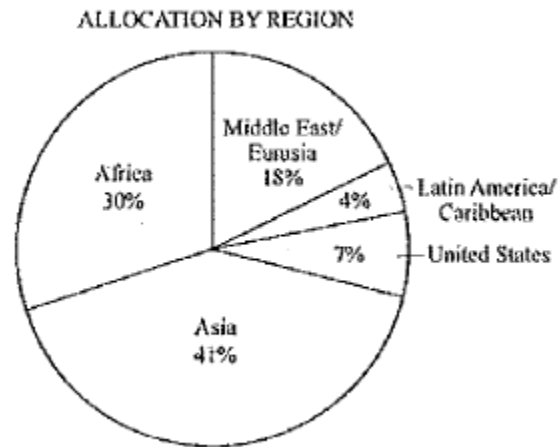
VH217874

During a sale at a store, the original price of a product was decreased by 20%. The sale price was then decreased by 10%. The price of the product after the two decreases is what percent less than the original price of the product?

\_\_\_\_\_ %

VH217185

ALLOCATION BY REGION



The circle graph above shows how a certain charity allocated money to certain regions of the world during a certain year. If the charity allocated a total of \$576 million to regions other than Latin America/Caribbean, what is the total amount of money the charity allocated to regions other than Asia and Latin America/Caribbean?

\$\_\_\_\_\_ million

VH217182

Raul plays a game with three fair coins of value 25 cents, 10 cents, and 5 cents. He flips the three coins and then adds the values, in cents, of the coins that land heads up to determine his score. What is the probability that Raul's score will be at least 15 ?

Give your answer as a fraction.

VH217636

To compute the bill for a customer's monthly electric usage, a certain electric company charges a \$35 service fee plus \$0.10 per kilowatt-hour of electricity used that month. A 5% tax on the sum of the service fee and usage charge is added to compute the total bill. Which of the following statements must be true for any given month?

Select all that apply.

- (A) If a customer's electric usage exceeds 650 kilowatt-hours, then the customer's total electric bill exceeds \$105.
- (B) If a customer's total electric bill exceeds \$105, then the customer's electric usage exceeds 650 kilowatt-hours.
- (C) If a customer's electric usage increases from one month to the next by at least 100 kilowatt-hours, then the customer's total electric bill increases by at least \$10.
- (D) If a customer's total electric bill increases from one month to the next by at least \$10, then the customer's electric usage increases by at least 100 kilowatt-hours.

VH217179

In a certain game, a circular spinner is divided into  $n$  equal sections, numbered 1 through  $n$ , where  $n$  is an integer greater than 2. Angie spins the spinner twice.

For each of the following events, indicate whether its probability is less than, equal to, or greater than  $\frac{1}{n}$ .

Event	Probability less than $\frac{1}{n}$	Probability equal to $\frac{1}{n}$	Probability greater than $\frac{1}{n}$
The spinner lands on 2 on the second spin.			
The spinner lands on 1 on the first spin and 2 on the second spin.			
The spinner lands on 1 on at least one spin.			
The spinner lands on 1 on both spins.			

## Item Keys

Accnum	Key
VH228470	C
VH220934	A
VH221975	C
VH221302	C
VH217874	28
VH217185	330
VH217182	5/8
VH217636	A,B,C
VH217179	"See below"

VH217179 Key:

Event	Probability less than $\frac{1}{n}$	Probability equal to $\frac{1}{n}$	Probability greater than $\frac{1}{n}$
The spinner lands on 2 on the second spin.		X	
The spinner lands on 1 on the first spin and 2 on the second spin.	X		
The spinner lands on 1 on at least one spin.			X
The spinner lands on 1 on both spins.	X		