koolearn
新东方在线

SAT数学

张斯乐

1.Heart of Algebra

1.1 Interpreting Linear Functions

Equation of a line: $y = kx + b$ where k is the slope, b is the y-intercept.

The constant k tells for each unit change in x how much y increases or decreases.

The constant b represents some starting value for y or some initial condition.

1.Heart of Algebra

1.1 Interpreting Linear Functions

在一次函数背景下的应用问题，SAT的考察重点是斜截式中，
斜率和纵轴上的截 距所对应的实际含义。

1.1 Interpreting Linear Functions

1. Salim wants to purchase tickets from a vendor to watch a tennis match. The vendor charges a one-time service fee for processing the purchase of the tickets. The equation T= 15n + 12 represents the total amount T, in dollars, Salim will pay for n tickets. What does 12 represent in the equation?

A. The price of one ticket, in dollars
B. The amount of the service fee, in dollars
C. The total amount, in dollars, Salim will pay for one ticket
D. The total amount, in dollars, Salim will pay for any number of tickets

1.1 Interpreting Linear Functions

2.In air, the speed of sound S, in meters per second, is a linear function of the air temperature T, in degrees Celsius, and is given by S(T)=0.6T + 331.4. Which of the following statements is the best interpretation of the number 331.4 in this context?

A.The speed of sound, in meters per second, at 0℃
B.The speed of sound, in meters per second, at 0.6℃
C.The increase in the speed of sound, in meters per second, that corresponds to an increase of 1℃
D.The increase in the speed of sound, in meters per second, that corresponds to an increase of 0.6℃

1.1 Interpreting Linear Functions

3. At a restaurant, n cups of tea are made by adding t tea bags to hot water. If T = n + 2, how many additional tea bags are needed to make each additional cup of tea?

A.None
B.One
C.Two
D.Three

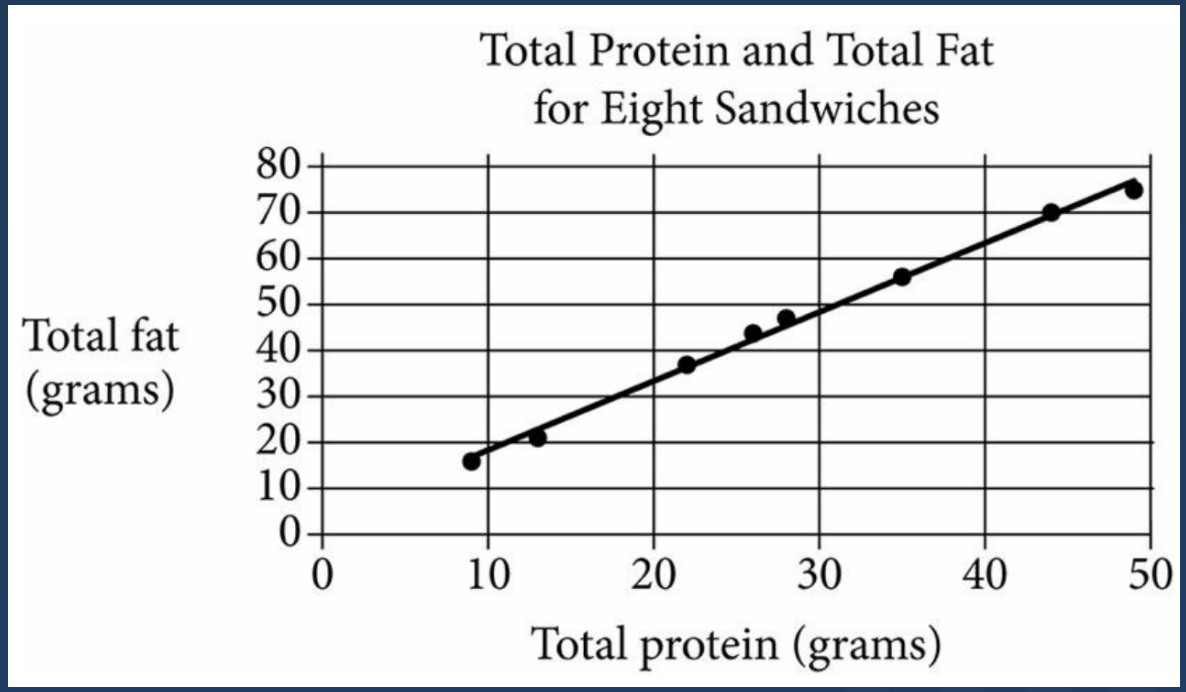
1.1 Interpreting Linear Functions

4. y= 19.99 + 1.50x
The preceding equation models the total cost *y*, in dollars, that a company charges a customer to rent a truck for one day and drive the truck *x* miles. The total cost consists of a flat fee plus a charge per mile driven. When the equation is graphed in the *x y*-plane, what does the *y*-intercept of the graph represent in terms of the model?

A.A flat fee of $19.99
B.A charge per mile of $1.50
C.A charge per mile of $19.99
D.Total daily charges of $21.49

1.1 Interpreting Linear Functions

5.



1.1 Interpreting Linear Functions

作业讲解-第6题到第10题

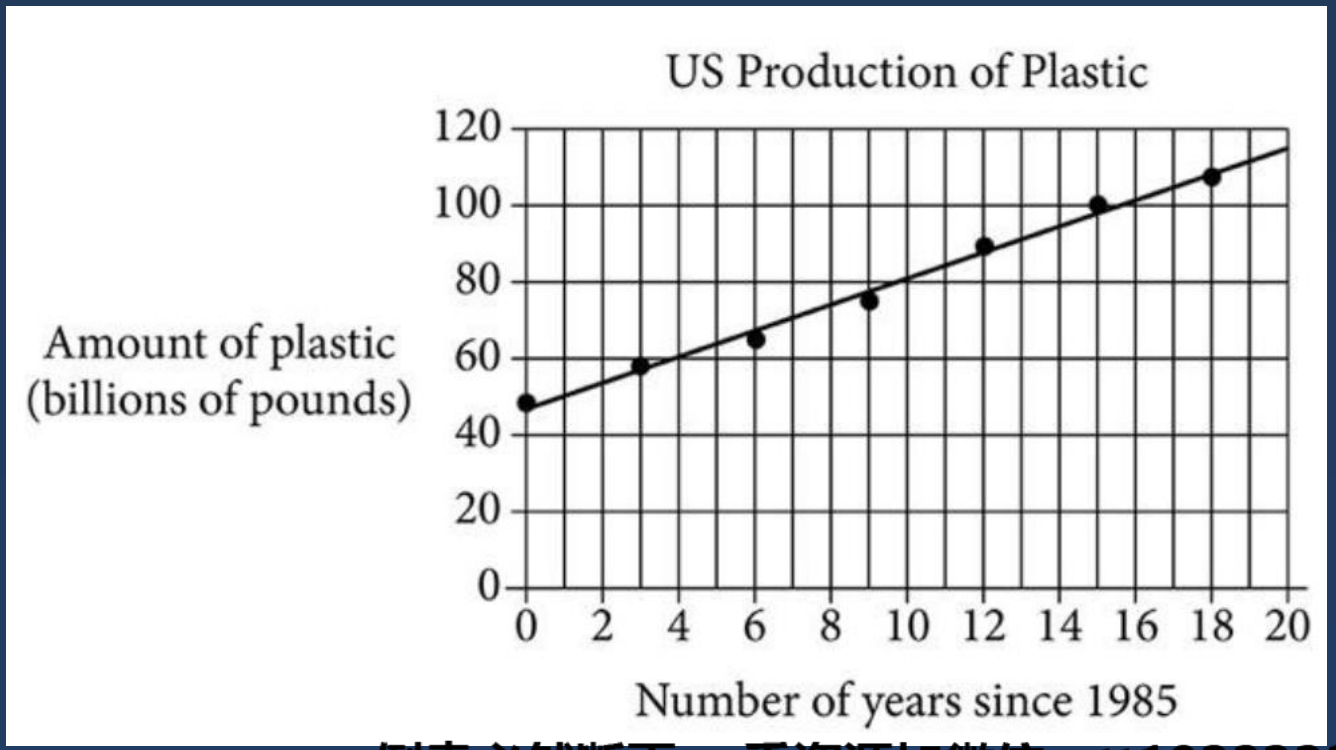
1.1 Interpreting Linear Functions

6. In respect to the given information, the function h, defined by h(t)=at + b, where a and b are constants, models the height, in centimeters, of the sunflower after t days of growth during a time period in which the growth is approximately linear. What does a represent?

A.The predicted number of centimeters the sunflower grows each day during the period
B.The predicted height, in centimeters, of the sunflower at the beginning of the period
C.The predicted height, in centimeters, of the sunflower at the end of the period
D.The predicted total increase in the height of the sunflower, in centimeters, during the period

1.1 Interpreting Linear Functions

7.



1.1 Interpreting Linear Functions

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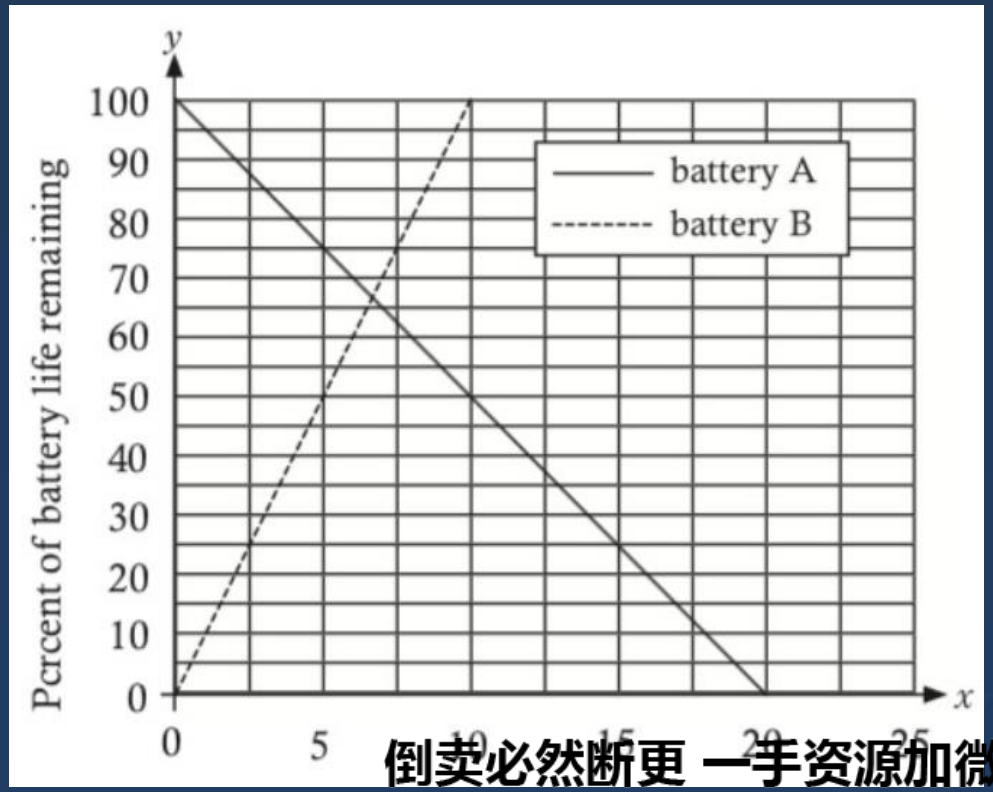

1.1 Interpreting Linear Functions

9. An archeologist estimates that, as a result of erosion, the height of the Great Pyramid of has been decreasing at a constant rate since it was built, The function above is used by the archeologist to model the height h(t), in feel, of the pyramid t years after it was built. According to the following statements is true?

A.Every 1,750 years the height of the pyramid decreases by 10 feet.
B.Every 175 years the height of the pyramid decreases by 0.1 foot.
C.Every 100 years the height of the pyramid decreases by 1.75 feet.
D.Every year the height of the pyramid decreases by 175 feet.

1.1 Interpreting Linear Functions

10. The boiling point of water at sea level is 212 degrees Fahrenheit (°F). For every increase of 1,000 feet above sea level, the boiling point of water drops approximately 1.84°F. Which of the following equations gives the approximate boiling point B, in°F, at h feet above sea level?

A.B = 212 — 1.84h
B.B = 212 — (0.00184)h
C.B = 212h
D.B = 1.84(212) — 1,000h

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Thanks

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