Geo Bellwork Monday, March 16, 2020

Questions 9 and 10 refer to the following information.

$$a = 1{,}052 + 1.08t$$

The speed of a sound wave in air depends on the air temperature. The formula above shows the relationship between a, the speed of a sound wave, in feet per second, and t, the air temperature, in degrees Fahrenheit (°F).

9

Which of the following expresses the air temparature in terms of the speed of a sound wave?

A) $t = \dfrac{a - 1{,}052}{1.08}$

B) $t = \dfrac{a + 1{,}052}{1.08}$

C) $t = \dfrac{1{,}052 - a}{1.08}$

D) $t = \dfrac{1.08}{a + 1{,}052}$

10

At which of the following air temperatures will the speed of a sound wave be closest to 1,000 feet per second?

A) −46°F

B) −48°F

C) −49°F

D) −50°F

11

Which of the following numbers is NOT a solution of the inequality $3x - 5 \geq 4x - 3$?

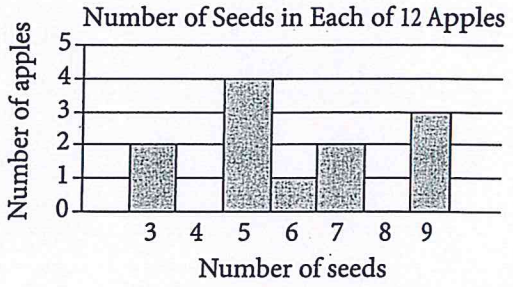
A) −1

B) −2

C) −3

D) −5

12



Based on the histogram above, of the following, which is closest to the average (arithmetic mean) number of seeds per apple?

A) 4

B) 5

C) 6

D) 7

CONTINUE

PSAT/SAT Answers

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D) $t = \dfrac{1.08}{a + 1{,}052}$

$a = 1{,}052 + 1.08t$

$-1{,}052 \quad -1{,}052$

$\dfrac{a - 1{,}052}{1.08} = \dfrac{1.08t}{1.08}$

$t = \dfrac{a - 1{,}052}{1.08}$

10

At which of the following air temperatures will the speed of a sound wave be closest to 1,000 feet per second?

a-value

A) −46°F

B) −48°F

C) −49°F

D) −50°F

$t = \dfrac{1000 - 1{,}052}{1.08}$

$t = -48.15°$

11

Which of the following numbers is NOT a solution of the inequality $3x - 5 \geq 4x - 3$?

(A) -1
B) -2
C) -3
D) -5

Method 1:

Solve this inequality

$3x - 5 \geq 4x - 3$
$-3x \quad -3x$

$-5 \geq x - 3$
$+3 \quad +3$

$-2 \geq x$

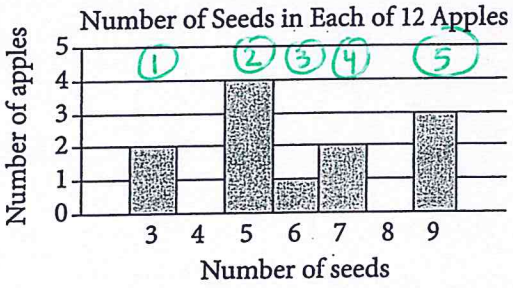
x is less than or equal to -2

choices B, C, and D ARE all less than or equal to -2. Therefore, A is the answer

Method 2:

SUBSTITUTE EACH CHOICE BACK INTO the INEQUALITY UNTIL YOU FIND ONE THAT ISN'T A SOL.

12



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A) 4
B) 5
(C) 6
D) 7

avg # seeds per apple = $\frac{\text{TOTAL \# seeds}}{\text{TOTAL \# apples}}$

TOTAL # seeds:

BAR (1): (2 apples)(3 seeds) = 6 seeds
" (2): (4 apples)(5 seeds) = 20 seeds
" (3): (1 apple)(6 seeds) = 6 seeds
" (4): (2 apples)(7 seeds) = 14 seeds
" (5): (3 apples)(9 seeds) = 27 seeds

73 seeds

12 apples

avg # seeds = $\frac{73 \text{ seeds}}{12 \text{ apples}}$

≈ 6 seeds/apple