16

For a right rectangular pyramid with height h and a square base with side length s, the volume is $V = \frac{1}{3}hs^2$. Which of the following defines the side length of the base of the pyramid in terms of the volume and height of the pyramid?

A) $\sqrt{\frac{3V}{h}}$

B) $\sqrt{\frac{h}{3V}}$

C) $\frac{3V}{h}$

D) $\frac{h}{3V}$

17

Breakfast Drink of Choice

Hot		Cold		
Tea	Coffee	Water	Milk	Juice
5.3%	26.9%	18.8%	17.2%	31.8%

A national survey determined the breakfast beverage of choice for American high school students. The results are summarized in the table above. Based on this information, which of the following is closest to the probability that a student drinks coffee, given that she does not drink a cold drink at breakfast?

A) 0.84

B) 0.66

C) 0.32

D) 0.27

18

From the year 2005 to the year 2015, the production of corn in a certain state has increased by 15%. During the same interval, the production of wheat has fallen by 40%. If the state produced identical amounts of each crop in 2005, but it produced 161 million bushels of corn in 2015, how much wheat, in millions of bushels, was produced by the state in 2015?

A) 84

B) 111.09

C) 233.33

D) 350

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$$0.27(a + b) = 0.15a + 0.35b$$

An athletic trainer is attempting to produce a carbohydrate-electrolyte solution that is at 27% carbohydrates by mass, which is the maximum amount of saturation allowed by her league. A supply company provides solutions that are at 15% and 35% carbohydrates by mass, respectively. Based on the equation above, if the trainer uses 10 quarts of the 15% solution, how many quarts of the 35% solution will she need?

A) 180

B) 90

C) 30

D) 15

CONTINUE

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Year	Production CORN	Production WHEAT
2005	x	x
2006		
2015	$x(1.15)$	$x(0.6)$

$x(1.15) = 161$ = corn in 2015

$x = \frac{161}{1.15}$

$\boxed{x = 140}$ Production of corn & wheat in 2005.

Wheat in 2015

$= x(0.60)$

$= (140)(0.60)$

$= 84$ ⟵ CORN in 2015.