ID: bbfa4707

A wind turbine completes **900** revolutions in **50** minutes. At this rate, how many revolutions per minute does this turbine complete?

A. **18**

B. **850**

C. **950**

D. **1,400**

$\frac{900}{50} = 18$ rev/min

ID: 0f1d42fd

The density of a certain type of wood is **353** kilograms per cubic meter. A sample of this type of wood is in the shape of a cube and has a mass of **345** kilograms. To the nearest hundredth of a meter, what is the length of one edge of this sample?

A. **0.98**

B. **0.99**

C. **1.01**

D. **1.02**

$4 \cdot 6 = 24$ edges

$$\frac{353}{1} = \frac{345}{V}$$

$$353V = 345$$

$$V = \frac{345}{353}$$

$$L = \sqrt[3]{\frac{345}{353}\ m^3}$$

$$L = 0.992388\ m$$

$$\frac{\frac{345}{353}\ m^3}{6\ m^2} = \frac{115}{706}\ m$$

$$\frac{\frac{115}{706}}{4} = 0.041\ m$$ ✗

ID: 309344bd

Last year, **200** students enrolled in an interior design program. This year, the number of students enrolled is **147%** of last year's number. How many students are enrolled in the interior design program this year?

A. **247**

B. **294** ✓ $200\left(\frac{147}{100}\right) = 294$

C. **347**

D. **394**

ID: 6baeb1d2

37% of the items in a box are green. Of those, **37%** are also rectangular. Of the green rectangular items, **42%** are also metal. Which of the following is closest to the percentage of the items in the box that are not rectangular green metal items?

A. **1.16%**

B. **57.50%** ✗

C. **94.25%** ✓

D. **98.84%**

$0.37 \cdot 0.37 = 0.1369$

$0.1369 \cdot 0.42 = 0.057498$ → rectangular green metal items

$0.37 + 0.1369 + 0.057498$

$= 0.564398$

$\approx 56.4\%$

$1 - 0.057498 = 0.942502$

$\approx 94.25\%$

ID: 25f9c72c

A kangaroo has a mass of 28 kilograms. What is the kangaroo's mass, in grams?

$(1\ \text{kilogram} = 1{,}000\ \text{grams})$

A. $28{,}000$

B. $1{,}028$

C. 972

D. 784

ID: 91ac409a

The table summarizes the distribution of age and assigned group for 90 participants in a study.

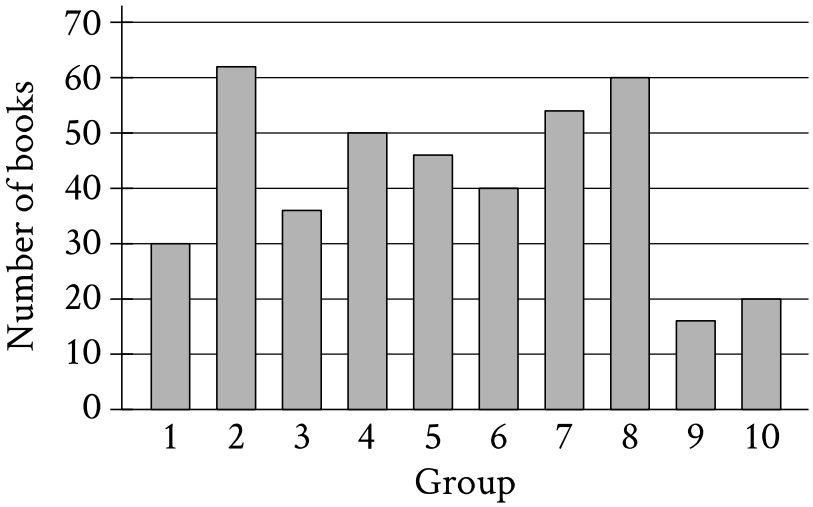
	0–9 years	10–19 years	20+ years	Total
Group A	7	14	9	30
Group B	6	4	20	30
Group C	17	12	1	30
Total	30	30	30	90

One of these participants will be selected at random. What is the probability of selecting a participant from group A, given that the participant is at least 10 years of age? (Express your answer as a decimal or fraction, not as a percent.)

$\frac{14}{60} \rightarrow \frac{7}{30}$ ×

$\frac{23}{60}$

ID: 5c216e8e



The bar graph shows the distribution of **414** books collected by **10** different groups for a book drive. How many books were collected by group **1**?

30 books ✓

ID: 22efbe91

In a group, 40% of the items are red. Of all the red items in the group, 30% also have stripes. What percentage of the items in the group are red with stripes?

A. 10%

B. 12%

C. 70%

D. 75%

$\checkmark (0.40 \cdot 0.30) \cdot 100 = 12\%$

ID: 40c8528e

At a conference, there are a total of $\mathbf{275}$ attendees. Each attendee is assigned to either group A, group B, or group C. If one of these attendees is selected at random, the probability of selecting an attendee who is assigned to group A is $\mathbf{0.44}$ and the probability of selecting an attendee who is assigned to group B is $\mathbf{0.24}$. How many attendees are assigned to group C?

$1 - 0.44 - 0.24 = 0.32$

$275 \cdot 0.32 = 88$ attendees in group C ✓

ID: 00048e15

If $\frac{4a}{b} = 6.7$ and $\frac{a}{bn} = 26.8$, what is the value of n?

$\frac{a}{b} = 1.675$

$\frac{1.675}{n} = 26.8$

$n = \frac{1.675}{26.8}$

$n = 0.0625$ ✓

ID: 1e7832f1

A sample consisting of 720 adults who own televisions was selected at random for a study. Based on the sample, it is estimated that 32% of all adults who own televisions use their televisions to watch nature shows, with an associated margin of error of 3.41%. Which of the following is the most plausible conclusion about all adults who own televisions?

A. More than 35.41% of all adults who own televisions use their televisions to watch nature shows.

B. Between 28.59% and 35.41% of all adults who own televisions use their televisions to watch nature shows.

C. Since the sample included adults who own televisions and not just those who use their televisions to watch nature shows, no conclusion can be made.

D. Since the sample did not include all the people who watch nature shows, no conclusion can be made.

ID: 4f608143

A box contains **13** red pens and **37** blue pens. If one of these pens is selected at random, what is the probability of selecting a red pen? (Express your answer as a decimal or fraction, not as a percent.)

$\frac{13}{50}$ ✓

ID: e9fe7acd

A competition consisted of four different events. One participant completed the first event with an average speed of **20.300** miles per hour. What was this average speed, in yards per hour? **(1 mile = 1,760 yards)**

$20.300 \cdot 1760 = 35{,}728$ yards/hour ✓

$$\frac{20.300 \text{ miles}}{1 \text{ hour}} \cdot \frac{1760 \text{ yards}}{1 \text{ mile}} = 35{,}728 \text{ yards / hour}$$

ID: e03f95ad

Data set A consists of the heights of **75** objects and has a mean of **25** meters. Data set B consists of the heights of **50** objects and has a mean of **65** meters. Data set C consists of the heights of the **125** objects from data sets A and B. What is the mean, in meters, of data set C?

$$\frac{25+65}{2} = 40$$

mean of C = 40

$$\frac{a}{75} = 25$$

$a = 1875$ meters

$$\frac{b}{50} = 65$$

$b = 3250$ meters

$$\frac{1875+3250}{125} = \text{mean of C}$$

mean of C = 41

ID: c50fc439

A trivia tournament organizer wanted to study the relationship between the number of points a team scores in a trivia round and the number of hours that a team practices each week. For the study, the organizer selected **55** teams at random from all trivia teams in a certain tournament. The table displays the information for the **40** teams in the sample that practiced for at least **3** hours per week.

Hours practiced	Number of points per round		
	6 to 13 points	14 or more points	Total
3 to 5 hours	6	4	10
More than 5 hours	4	26	30
Total	10	30	40

Which of the following is the largest population to which the results of the study can be generalized?

A. All trivia teams in the tournament that scored **14** or more points in the round

B. The **55** trivia teams in the sample

C. The **40** trivia teams in the sample that practiced for at least **3** hours per week

D. All trivia teams in the tournament

Sample is representative of it's entire demographic.

ID: 85e8cb3f

Each rock in a collection of 70 rocks was classified as either igneous, metamorphic, or sedimentary, as shown in the frequency table.

Classification	Frequency
igneous	10
metamorphic	33
sedimentary	27

If one of these rocks is selected at random, what is the probability of selecting a rock that is igneous?

A. $\frac{10}{27}$

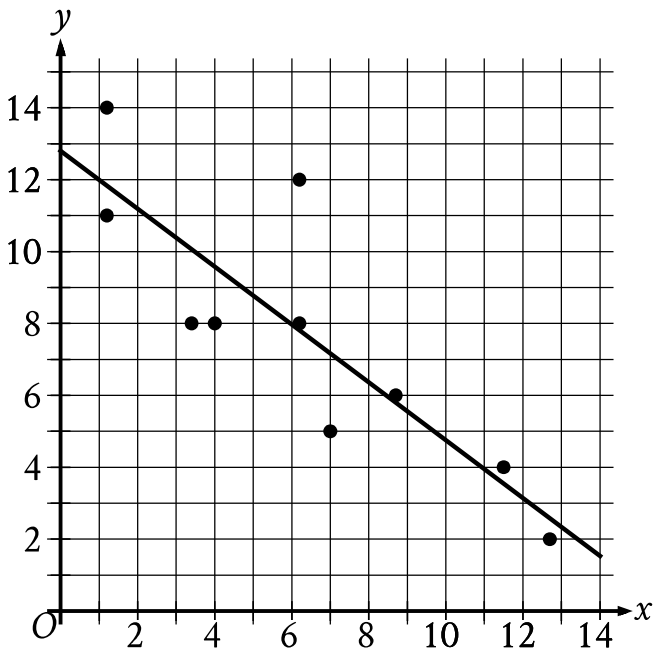
B. $\frac{10}{33}$

C. $\frac{10}{60}$

D. $\frac{10}{70}$

ID: 845c6478

The scatterplot shows the relationship between two variables, x and y. A line of best fit is also shown.



Which of the following is closest to the slope of the line of best fit shown?

A. -2.4

B. -0.8

C. 0.8

D. 2.4

ID: d683c482

The number w is 110% greater than the number z. The number z is 55% less than 50. What is the value of w?

$z = 50 - 50\left(\frac{55}{100}\right)$

$z = \frac{45}{2}$

$w = \frac{45}{2} + \frac{45}{2}\left(\frac{110}{100}\right)$

$w = \frac{189}{4}$ or 47.25 ✓

ID: 128d0947

How many tablespoons are equivalent to **14** teaspoons? **(3 teaspoons = 1 tablespoon)**

$\frac{1}{3} = \frac{x}{14}$

$14 = 3x$

$x = \frac{14}{3}$ tablespoons ✓

ID: 79c54a4d

Each vertex of a $\mathbf{14}$-sided polygon is labeled with one of the $\mathbf{14}$ letters $\boldsymbol{A}$ through $\boldsymbol{N}$, with a different letter at each vertex. If one vertex is selected at random, what is the probability that the letter $\boldsymbol{D}$ will be at the selected vertex? (Express your answer as a decimal or fraction, not as a percent.)

$\frac{1}{14}$

ID: 7dfb73de

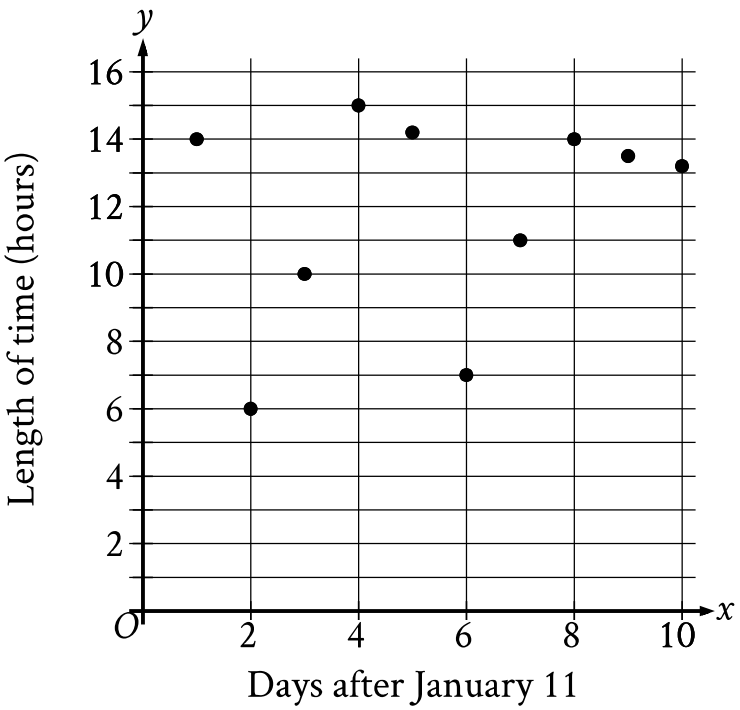
According to a set of standards, a certain type of substance can contain a maximum of $\mathbf{0.001\%}$ phosphorus by mass. If a sample of this substance has a mass of $\mathbf{140}$ grams, what is the maximum mass, in grams, of phosphorus the sample can contain to meet these standards?

0.14 g X

$140 \cdot \left(\frac{0.001}{100}\right) = 0.0014\ g$

ID: 6a61db85

The scatterplot shows the relationship between the length of time y, in hours, a certain bird spent in flight and the number of days after January 11, x.



What is the average rate of change, in hours per day, of the length of time the bird spent in flight on January 13 to the length of time the bird spent in flight on January 15?

$$\frac{18-6}{4-2} = \frac{9}{2}$$

average rate of change $= \frac{9}{2}$ ✓