

SAT Math

Probability 1

Question # ID

1.1 1353b86e

Colors of

Marbles in a Bag

| Color | Number |
|-------|--------|
| Red | 8 |
| Blue | 10 |
| Green | 22 |
| Total | 40 |

The table shows the number of different colors of marbles in a bag. If a marble is chosen at random from the bag, what is the probability that the marble will be blue?

A. $\frac{30}{40}$

B. $\frac{22}{40}$

C. $\frac{18}{40}$

D. $\frac{10}{40}$

1.2 d89c1513

Customer Purchases at a Gas Station

| | Beverage purchased | Beverage not purchased | Total |
|------------------------|--------------------|------------------------|-------|
| Gasoline purchased | 60 | 25 | 85 |
| Gasoline not purchased | 35 | 15 | 50 |
| Total | 90 | 40 | 135 |

On Tuesday, a local gas station had 135 customers. The table above summarizes whether or not the customers on Tuesday purchased gasoline, a beverage, both, or neither. Based on the data in the table, what is the probability that a gas station customer selected at random on that day did not purchase gasoline?

A. $\frac{15}{50}$

B. $\frac{15}{40}$

C. $\frac{35}{50}$

D. $\frac{50}{135}$

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1.3 46545dd6

Number of High School Students Who
Completed Summer Internships

| High school | Year | | | | |
|-------------|------|------|------|------|------|
| | 2008 | 2009 | 2010 | 2011 | 2012 |
| Foothill | 87 | 80 | 75 | 76 | 70 |
| Valley | 44 | 54 | 65 | 76 | 82 |
| Total | 131 | 134 | 140 | 152 | 152 |

The table above shows the number of students from two different high schools who completed summer internships in each of five years. No student attended both schools. Of the students who completed a summer internship in 2010, which of the following represents the fraction of students who were from Valley High School?

A. $\frac{10}{140}$

B. $\frac{65}{140}$

C. $\frac{75}{140}$

D. $\frac{65}{75}$

1.4 16cea46c

| Voice type | Number of singers |
|--------------|-------------------|
| Countertenor | 4 |
| Tenor | 6 |
| Baritone | 10 |
| Bass | 5 |

A total of 25 men registered for singing lessons. The frequency table shows how many of these singers have certain voice types. If one of these singers is selected at random, what is the probability he is a baritone?

A. 0.10

B. 0.40

C. 0.60

D. 0.67

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1.5 b680e76d

A survey taken by 1,000 students at a school asked whether they played school sports. The table below summarizes all 1,000 responses from the students surveyed.

| | Males | Females |
|----------------------------|-------|---------|
| Play a school sport | 312 | 220 |
| Do not play a school sport | ? | 216 |

How many of the males surveyed responded that they do not play a school sport?

- A. 109
- B. 252
- C. 468
- D. 688

1.6 60caadfd

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. $\frac{10}{70}$

1.7 e5b5fbdd

Of the 8 planets in our solar system, 4 are considered rocky. If a student randomly selects 1 of those 8 planets as a topic for a report, what is the probability that the selected planet will be rocky?

- A. $\frac{1}{8}$
- B. $\frac{1}{4}$
- C. $\frac{1}{2}$
- D. 2

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1.8 ec7b0eb8

| Texting behavior | Talks on cell phone daily | Does not talk on cell phone daily | Total |
|------------------|---------------------------|-----------------------------------|------------|
| Light | 110 | 146 | 256 |
| Medium | 139 | 164 | 303 |
| Heavy | 166 | 74 | 240 |
| Total | 415 | 384 | 799 |

In a study of cell phone use, 799 randomly selected US teens were asked how often they talked on a cell phone and about their texting behavior. The data are summarized in the table above. If one of the 799 teens surveyed is selected at random, what is the probability that the teen talks on a cell phone daily?

A. $\frac{1}{799}$

B. $\frac{415}{799}$

C. $\frac{384}{415}$

D. $\frac{384}{799}$

1.9 12dbe3de

A store received a shipment of 1,000 MP3 players, 4 of which were defective. If an MP3 player is randomly selected from this shipment, what is the probability that it is defective?

A. 0.004

B. 0.04

C. 0.4

D. 4

1.10 2a08d878

There are n nonfiction books and 12 fiction books on a bookshelf. If one of these books is selected at random, what is the probability of selecting a nonfiction book, in terms of n ?

A. $\frac{n}{12}$

B. $\frac{n}{n+12}$

C. $\frac{12}{n}$

D. $\frac{12}{n+12}$

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1.11 1dcea480

A bag contains a total of 60 marbles. A marble is to be chosen at random from the bag. If the probability that a blue marble will be chosen is 0.35, how many marbles in the bag are blue?

- A. 21
- B. 25
- C. 35
- D. 39

1.12 4e527894

There are 20 buttons in a bag: 8 white buttons, 2 orange buttons, and 10 brown buttons. If one of these buttons is selected at random, what is the probability of selecting a white button?

- A. $\frac{2}{20}$
- B. $\frac{8}{20}$
- C. $\frac{10}{20}$
- D. $\frac{12}{20}$

1.13 0a99e5bb

-13, 4, 23

A data set of three numbers is shown. If a number from this data set is selected at random, what is the probability of selecting a negative number?

- A. 0
- B. $\frac{1}{3}$
- C. $\frac{2}{3}$
- D. 1

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1.14 dae79de4

| | 1 visit | 2 or more visits | Total |
|------------------------|---------|------------------|-------|
| Less than 40 years old | 15 | 15 | 30 |
| At least 40 years old | 20 | 85 | 105 |
| Total | 35 | 100 | 135 |

The table summarizes customers who visited a car dealership in the last month by age and number of visits they made to the dealership. If a customer from the last month is selected at random, what is the probability that the selected customer is at least 40 years old?

A. $\frac{30}{135}$

B. $\frac{35}{135}$

C. $\frac{100}{135}$

D. $\frac{105}{135}$