

1 Three percent of eight is what percent of three?

- A 3 percent
- B 8 percent
- C 9 percent
- D 16 percent
- E 24 percent

2 A container filled with water had  $\frac{7}{8}$  of its content removed.

Then, the container was filled with 38 litres of water, which was filled to  $\frac{3}{5}$  of its capacity.

What was the total capacity of the container?

- A 60 litres
- B 80 litres
- C 100 litres
- D 120 litres
- E 160 litres

3 The value of a certain fraction is 0.28, and the denominator of the fraction is 25.

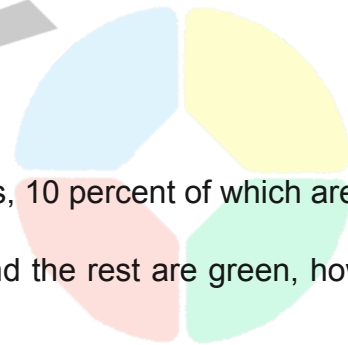
What is the numerator of the fraction?

- A 7
- B 8
- C 9
- D 12
- E 15

4 Mickey Mouse has a jar containing 5 860 marbles, 10 percent of which are red.

If one-third of the remaining marbles are blue and the rest are green, how many green marbles are in the jar?

- A 1 172 green marbles
- B 1 758 green marbles
- C 2 437 green marbles
- D 2 786 green marbles
- E 3 516 green marbles



- 5 Huey's height is 60 percent of Dewey's height, and Louie's height is 55 percent of Dewey's height.

What is the ratio of Huey's height to Louie's height?

- A  $1/4$     D  $12/11$   
B  $1/3$     E  $3/1$   
C  $11/12$

- 6 At Cage and Fish Law Firm, 25 percent of the male lawyers and 30 percent of the female lawyers are associates.

If 60 percent of the law firm's lawyers are male, what is the ratio of the number of male associates to the number of female associates?

- A  $6/4$     D  $4/3$   
B  $5/4$     E  $5/2$   
C  $3/2$

- 7 Minnie Mouse's monthly budget includes \$1 200 for rent, \$400 for food, \$150 for internet, \$250 for electricity, and \$200 for groceries.

If Minnie Mouse's monthly income is \$3 300, what fraction of it is left for other spending?

- A  $1/5$     D  $2/5$   
B  $1/4$     E  $2/3$   
C  $1/3$

- 8 Twenty-four seconds is what fraction of twenty-four minutes?

- A  $1/6$     D  $1/30$   
B  $1/10$     E  $1/60$   
C  $1/24$



9 A bookshelf at the library contains 235 books.

If 125 of the books are history books, 25 are science books, 38 are travel books, and the rest are classic novels, what fraction of the books on the bookshelf are classic novels?

A  $\frac{1}{6}$

D  $\frac{2}{15}$

B  $\frac{1}{5}$

E  $\frac{3}{8}$

C  $\frac{1}{4}$

10 Sixty percent of the total annual budget of ACME Corporation is allotted to advertising.

Five-sixths of the amount allotted to advertising is spent on social media marketing.

If the total annual budget of ACME Corporation is \$30 million, how much is spent on social media marketing?

A \$10 million

D \$20 million

B \$12 million

E \$24 million

C \$15 million

11 One-fifth of the marbles in the jar are red,  $\frac{1}{4}$  are blue,  $\frac{1}{2}$  are green, and the remaining 10 are yellow.

What is the total number of marbles in the jar?

A 80 marbles

D 200 marbles

B 110 marbles

E 400 marbles

C 160 marbles



- 12 Of the 400 students in the graduating class, 30 percent were women, and of these,  $\frac{1}{5}$  went to law school.

If the number of men who went to law school was twice the number of women who went to law school, how many men went to law school?

- A 120 men  
B 48 men  
C 40 men  
D 24 men  
E 20 men

- 13 The value of a certain fraction with a numerator of 9 is 0.45.

What is the denominator of the fraction?

- A 20  
B 24  
C 25  
D 30  
E 36

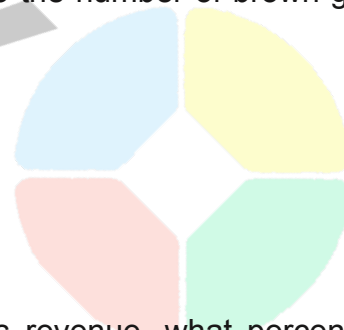
- 14 Half of the number of black goats on Old MacDonald's farm equals  $\frac{1}{8}$  of the total number of goats and  $\frac{1}{3}$  of the number of brown goats equals  $\frac{1}{9}$  of the total number of goats.

What is the ratio of the number of black goats to the number of brown goats on the farm?

- A  $\frac{16}{27}$   
B  $\frac{2}{3}$   
C  $\frac{3}{4}$   
D  $\frac{4}{5}$   
E  $\frac{8}{9}$

- 15 If the store's profit is 20 percent of the store's revenue, what percent of the store's expenses is the store's profit? (Profit = Revenue – Expenses)

- A 20 percent  
B 25 percent  
C 30 percent  
D 35 percent  
E 40 percent



- 16** Three-fifths of the apples that Snow White picked are red, and the remaining 32 apples are green.

If Snow White sold all the red apples and half of the green apples, how many did she sell?

- |                    |                    |
|--------------------|--------------------|
| <b>A</b> 32 apples | <b>D</b> 80 apples |
| <b>B</b> 48 apples | <b>E</b> 84 apples |
| <b>C</b> 64 apples |                    |
- 17** A certain alloy is 80 percent bronze and 20 percent brass by mass.

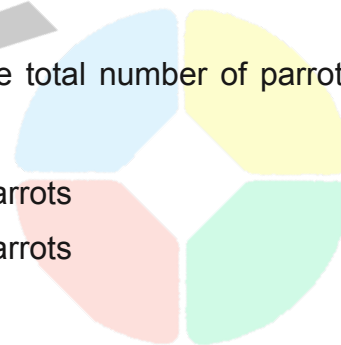
Bronze is 60 percent copper and 40 percent zinc by mass, while brass is 50 percent copper and 50 percent zinc by mass.

What percentage of the alloy is zinc?

- |                     |                     |
|---------------------|---------------------|
| <b>A</b> 34 percent | <b>D</b> 40 percent |
| <b>B</b> 36 percent | <b>E</b> 42 percent |
| <b>C</b> 38 percent |                     |
- 18** One-third of all the parrots at the aviary are green, and  $\frac{2}{5}$  of the remaining parrots are red.

If the remaining 10 parrots are blue, what is the total number of parrots in the aviary?

- |                     |                     |
|---------------------|---------------------|
| <b>A</b> 15 parrots | <b>D</b> 25 parrots |
| <b>B</b> 18 parrots | <b>E</b> 36 parrots |
| <b>C</b> 21 parrots |                     |



- 19 A certain company spent  $\frac{1}{4}$  of its annual budget on research and  $\frac{1}{7}$  of the remaining budget on advertising.

What fraction of the company's annual budget was left after its research and advertising expenditures?

- A  $\frac{5}{14}$  D  $\frac{9}{14}$   
B  $\frac{1}{2}$  E  $\frac{9}{11}$   
C  $\frac{17}{28}$

- 20 The first solution is made up of 90 percent water, 7 percent alcohol, and 3 percent oil by volume, while the second solution is made up of only water and oil.

When the two solutions are combined, the resulting mixture is 85 percent water, 5 percent alcohol, and 10 percent oil by volume.

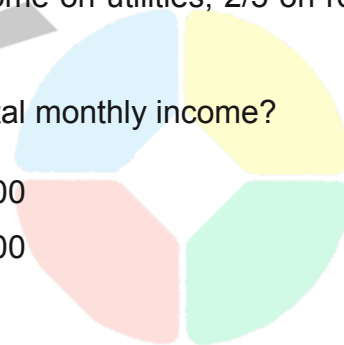
What percentage of the second solution is water?

- A 75 percent D 67.5 percent  
B 72.5 percent E 65 percent  
C 70 percent

- 21 The Cullens spend  $\frac{1}{3}$  of their total monthly income on utilities,  $\frac{2}{5}$  on rent, and  $\frac{1}{5}$  on clothes.

If they still have \$400 left, how much was their total monthly income?

- A \$4 000 D \$7 000  
B \$5 000 E \$8 000  
C \$6 000



**22** One-third of the company's total annual revenue came from royalty fees.

Of the remaining revenue, one-fourth came from international sales, and the rest came from domestic sales.

What percentage of the company's total annual revenue came from domestic sales?

- A 17 percent
- B 25 percent
- C 42 percent
- D 50 percent
- E 75 percent

**23** At least how many litres of pure water must be added into 387 litres of pure alcohol to create a solution that is no more than 90 percent alcohol?

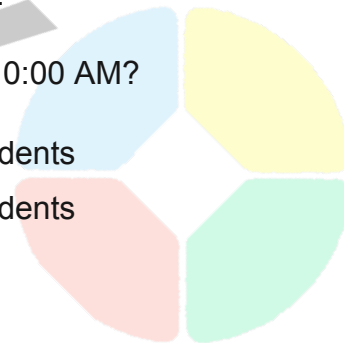
- A 13 litres
- B 43 litres
- C 103 litres
- D 348 litres
- E 430 litres

**24** Thirty-six students took the IQ test.

Four-ninths of the students finished the test by 9:00 AM, and 70 percent of the remaining students finished the test by 10:00 AM.

How many students had not finished the test by 10:00 AM?

- A 1 student
- B 2 students
- C 4 students
- D 6 students
- E 8 students



- 25** A box only contains red, blue, green, and yellow tokens.

Thirty-five percent of the tokens in the box are red, and 23 percent are blue.

If 12 percent, or 60 tokens, are green, how many yellow tokens are in the box?

- A** 18 yellow tokens                      **D** 180 yellow tokens  
**B** 30 yellow tokens                      **E** 240 yellow tokens  
**C** 150 yellow tokens

- 26** The recipe for a chocolate cake calls for  $\frac{2}{3}$  of a bar of butter.

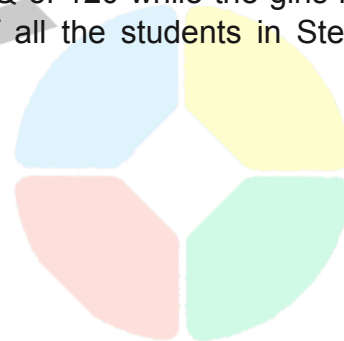
How many chocolate cakes did Daisy Duck bake if she used a total of four bars of butter?

- A** 3 chocolate cakes                      **D** 6 chocolate cakes  
**B** 4 chocolate cakes                      **E** 7 chocolate cakes  
**C** 5 chocolate cakes

- 27** Two-thirds of the students in Steve Xu's selective class are boys, and the rest are girls.

If the boys have an average (arithmetic mean) IQ of 120 while the girls have an average IQ of 180, what is the average IQ of all the students in Steve Xu's selective class?

- A** 130    **D** 160  
**B** 140    **E** 170  
**C** 150



- 28** The recipe for chocolate chip cookies calls for  $\frac{3}{2}$  bags of flour and makes two dozen cookies.

How many bags of flour is needed for the same recipe to make 30 cookies?

- A**  $\frac{8}{15}$  bags                                      **D**  $\frac{10}{7}$  bags  
**B**  $\frac{5}{6}$  bags                                      **E**  $\frac{15}{8}$  bags  
**C**  $\frac{6}{5}$  bags



**29** Ten percent of the tourists in the group are Asians.

If 12 percent of the male tourists and 8 percent of the female tourists are Asians, what percentage of the tourists are male?

- A 10 percent
- B 12 percent
- C 20 percent
- D 30 percent
- E 50 percent

**30** Sixty percent of the 2 000 students in the Community College are active in sports.

The number of female students who are not active in sports is half the number of male students who are active in sports.

If the number of female students who are not active in sports is three times the number of male students who are not active in sports, how many female students are there at the Community College?

- A 2 000 female students
- B 1 400 female students
- C 1 200 female students
- D 800 female students
- E 600 female students

