

# M110 PERCENT

1

1

5

What percentage of 40 is 15?

- A) 62.5%
- B) 37.5%
- C) 32.5%
- D) 2.70%

2

5

What is 120% of 2,000?

- A) 240
- B) 400
- C) 2,400
- D) 4,000

3

2

A gardener buys two kinds of fertilizer. Fertilizer A contains 60% filler materials by weight and Fertilizer B contains 40% filler materials by weight. Together, the fertilizers bought by the gardener contain a total of 240 pounds of filler materials. Which equation models this relationship, where  $x$  is the number of pounds of Fertilizer A and  $y$  is the number of pounds of Fertilizer B?

- A)  $0.4x + 0.6y = 240$
- B)  $0.6x + 0.4y = 240$
- C)  $40x + 60y = 240$
- D)  $60x + 40y = 240$

4

2

The length of line segment  $AB$  is 380. The length of line segment  $CD$  is 95% of the length of line segment  $AB$ . What is the length of line segment  $CD$ ?

- A) 285
- B) 361
- C) 380
- D) 400

5

4

Nick surveyed a random sample of the freshman class of his high school to determine whether the Fall Festival should be held in October or November. Of the 90 students surveyed, 25.6% preferred October. Based on this information, about how many students in the entire 225-person class would be expected to prefer having the Fall Festival in October?

- A) 50
- B) 60
- C) 75
- D) 80

6

4

A waiter receives tips from each customer. On average, the tip is 15% of the customer's bill. At this rate, which of the following is closest to the tip the waiter can expect when a customer has a bill that is \$78.20?

- A) \$8.00
- B) \$10.00
- C) \$12.00
- D) \$14.00

7

24

A customer's monthly water bill was \$75.74. Due to a rate increase, her monthly bill is now \$79.86. To the nearest tenth of a percent, by what percent did the amount of the customer's water bill increase?

A) 4.1%  
 B) 5.1%  
 C) 5.2%  
 D) 5.4%

8

4

Last year, 800 students attended the career fair at West High School. This year, the number of students who attended the career fair increased by 5%. How many students attended the career fair at West High School this year?

A) 804  
 B) 805  
 C) 840  
 D) 1,200

9

5

Of the 50 states in the United States, 12 states are in the Midwest region. What percent of states in the United States are in the Midwest region?

A) 12%  
 B) 24%  
 C) 38%  
 D) 62%

10

4, 5, 5, 6, 7, 8, 8, 9, 9, 9, 10

Eleven employees at a company were selected at random to participate in a survey. The survey included a question that asked the participants to rate their work satisfaction on a scale from 1 to 10. The list shows the eleven ratings of the participants.

5

Which of the following is closest to the percentage of participants who gave a rating of 5?

A) 9%  
 B) 18%  
 C) 27%  
 D) 45%

11

5

At Lincoln High School, approximately 7 percent of enrolled juniors and 5 percent of enrolled seniors were inducted into the National Honor Society last year. If there were 562 juniors and 602 seniors enrolled at Lincoln High School last year, which of the following is closest to the total number of juniors and seniors at Lincoln High School last year who were inducted into the National Honor Society?

A) 140      C) 39  
 B) 69        D) 30

12

1

Aaron is staying at a hotel that charges \$99.95 per night plus tax for a room. A tax of 8% is applied to the room rate, and an additional onetime untaxed fee of \$5.00 is charged by the hotel. Which of the following represents Aaron's total charge, in dollars, for staying  $x$  nights?

A)  $(99.95 + 0.08x) + 5$   
 B)  $1.08(99.95x) + 5$   
 C)  $1.08(99.95x + 5)$   
 D)  $1.08(99.95 + 5)x$

13

7

Giovanni wants to buy shirts that cost \$19.40 each and sweaters that cost \$24.80 each. An 8% sales tax will be applied to the entire purchase. If Giovanni buys 2 shirts, which equation relates the number of sweaters purchased,  $p$ , and the total cost in dollars,  $y$ ?

- A)  $1.08(38.80 + 24.80p) = y$
- B)  $38.80 + 24.80p = 0.92y$
- C)  $38.80 + 24.80p = 1.08y$
- D)  $0.92(38.80 + 24.80p) = y$

14

9

On November 1st, there were 2,500 boxes in a warehouse. On December 1st, there were 15% fewer boxes in the warehouse than there were on November 1st. On January 1st, there were 20% more boxes in the warehouse than there were on December 1st. How many boxes were in the warehouse on January 1st?

- A) 1,700
- B) 2,125
- C) 2,550
- D) 2,625

15

11

A local restaurant gives teachers a 20% discount on all their meals. If a teacher pays \$14.00 for a meal after the discount was applied, what was the price of the meal before the discount?

- A) \$16.80
- B) \$17.50
- C) \$20.00
- D) \$25.20

16

12

A customer paid \$53.00 for a jacket after a 6 percent sales tax was added. What was the price of the jacket before the sales tax was added?

- A) \$47.60
- B) \$50.00
- C) \$52.60
- D) \$52.84

17

12

A book was on sale for 40% off its original price. If the sale price of the book was \$18.00, what was the original price of the book? (Assume there is no sales tax.)

- A) \$7.20
- B) \$10.80
- C) \$30.00
- D) \$45.00

18

16

In 2015 the populations of City X and City Y were equal. From 2010 to 2015, the population of City X increased by 20% and the population of City Y decreased by 10%. If the population of City X was 120,000 in 2010, what was the population of City Y in 2010?

- A) 60,000
- B) 90,000
- C) 160,000
- D) 240,000

19

18

Which of the following represents the result of increasing the quantity  $x$  by 9%, where  $x > 0$ ?

A.  $1.09x$   
 B.  $0.9x$   
 C.  $x + 9$   
 D.  $x + 0.09$

20

19

How many liters of a 25% saline solution must be added to 3 liters of a 10% saline solution to obtain a 15% saline solution?

21

20

Alma bought a laptop computer at a store that gave a 20 percent discount off its original price. The total amount she paid to the cashier was  $p$  dollars, including an 8 percent sales tax on the discounted price. Which of the following represents the original price of the computer in terms of  $p$ ?

A)  $0.88p$     C)  $(0.8)(1.08)p$   
 B)  $\frac{p}{0.88}$     D)  $\frac{p}{(0.8)(1.08)}$

22

22

The sum of three numbers is 855. One of the numbers,  $x$ , is 50% more than the sum of the other two numbers. What is the value of  $x$ ?

A) 570  
 B) 513  
 C) 214  
 D) 155

23

22

The budget for a school band was \$8,000 in 2010. The budget decreased by 15% from 2010 to 2011 and then increased by 22% from 2011 to 2012. Which of the following expressions represents the budget, in dollars, for the school band in 2012?

A)  $(1.15)(1.22)(8,000)$   
 B)  $(0.85)(1.22)(8,000)$   
 C)  $(1.15)(0.78)(8,000)$   
 D)  $(0.85)(0.78)(8,000)$

24

24

Which of the following represents the positive number  $r$  increased by 5%?

A)  $0.05r$   
 B)  $0.95r$   
 C)  $1.05r$   
 D)  $5r$

1 B   3 B   5 B   7 D   9 B   11 B   13 A   15 B   17 C   19 A   21 D   23 B  
2 C   4 B   6 C   8 C   10 B   12 B   14 C   16 B   18 C   20 1.5   22 B   24 C  
 $\frac{3}{2}$