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Online Homework

Focused Exercises for Math SAT

Skill Set 18: Percents

Many of the problems in this exercise set came from The College Board, writers of the SAT exam.

1. A company produced 300 appliances in the first week of the month. Because it received additional machinery, its production increased 50 percent from the first week to the second week. How many appliances did the company produce the second week?

2. If 30 percent of 40 percent of a positive number is equal to 20 percent of w percent of the same number, what is the value of w?

    (A) 80
    (B) 60
    (C) 50
    (D) 15
    (E) 10

3. There are 75 more woman than men enrolled in Linden College. If there are n men enrolled, then, in terms of n, what percent of those enrolled are men?

    (A) $\dfrac{n}{n+75}\%$

    (B) $\dfrac{n}{2n+75}\%$

    (C) $\dfrac{n}{100\,(2n+75)}\%$

    (D) $\dfrac{100n}{n+75}\%$

    (E) $\dfrac{100n}{2n+75}\%$

4. The price of a telephone was first increased by 10 percent and then the new price was decreased by 25 percent. The final price was what percent of the initial price?

    (A) 78%
    (B) 80%
    (C) 82.5%
    (D) 85%
    (E) 87.5%

5. If $a + 2b$ is equal to 125 percent of 4b, what is the value of $\dfrac{a}{b}$?

6.   If 20 percent of *x* equals 80 percent of *y*, which of the following expresses *y* in terms of *x* ?

(A) *y* = 16% of *x*
(B) *y* = 25% of *x*
(C) *y* = 60% of *x*
(D) *y* = 100% of *x*
(E) *y* = 400% of *x*

7.   When the positive <u>even</u> integer *n* is increased by 50 percent of itself, the result is between 10 and 20. What is one possible value of *n* ?

8.   If 30 percent of *m* is 40, what is 15 percent of *m* ?

(A) 15
(B) 20
(C) 25
(D) 30
(E) 35

9.   A salesman's monthly gross pay consists of $1,200 plus 20 percent of the dollar amount of his sales. If his gross pay for one month was $2,500, what was the dollar amount of his sales for that month? (Disregard the $ sign when gridding your answer?

10.   A store charges $28 for a certain type of sweater. This price is 40 percent more than the amount it costs the store to buy one of these sweaters. At an end-of-season sale, store employees can purchase any remaining sweaters at 30 percent off the store's cost. How much would it cost an employee to purchase a sweater of this type at this sale?

(A) $8.40
(B) $14.00
(C) $19.60
(D) $20.00
(E) $25.20

11. In a certain shop, items were put in a showcase and assigned prices for January. Each month after that, the price was 10 percent less than the price for the previous month. If the price of an item was p dollars for January, what was the price for April?

(A) $0.4p$
(B) $0.6\ p$
(C) $0.6561p$
(D) $0.7p$
(E) $0.729p$

12. What is the least possible integer for which 20 percent of that integer is greater than 1.2 ?

(A) 2
(B) 3
(C) 4
(D) 6
(E) 7

13. The grand prize for winning a contest is $10,000. After 28 percent of the prize is deducted for taxes, the winner receives the balance of the prize in annual payouts of equal amounts over a 3-year period. How many dollars will the prizewinner receive each year of the 3 years? (Disregard the $ sign when gridding your answer.)

14. A certain state requires that an applicant for a driver's license answer at least 80 percent of the questions on a written test correctly. If the test has 30 questions on it, at least how many of these questions must be answered correctly?

(A) 20
(B) 21
(C) 22
(D) 23
(E) 24

15.   A total of 60 advertisements were sold for a school yearbook. If 20 percent of the first 20 sold were in color, 40 percent of the next 30 sold were in color, and 80 percent of the last 10 sold were in color, what percent of the 60 advertisements were in color?

(A) 30%

(B) $33\frac{1}{3}\%$

(C) 40%

(D) $46\frac{2}{3}\%$

(E) 60%

16.   75 percent of 88 is the same as 60 percent of what number?

(A) 100
(B) 103
(C) 105
(D) 108
(E) 110

17.   In a group study on nutrition, the average daily intake of calories per person was 8 percent higher in April than it was in March. If this average was 3,200 calories in March, what was the average daily intake of calories per person in April?

18.   The length of rectangle S is 20 percent longer than the length of rectangle R, and the width of rectangle S is 20 percent shorter than the width of rectangle R. The area of rectangle S is

(A) 20% greater than the area of rectangle R
(B) 4% greater than the area of rectangle R
(C) equal to the area of rectangle R
(D) 4% less than the area of rectangle R
(E) 20% less than the area of rectangle R

19. If r is 35 percent of p and s is 45 percent of p, what is $r + s$ in terms of p ?

(A) 0.4p
(B) 0.5p
(C) 0.6p
(D) 0.7p
(E) 0.8p

20. A person slices a pie into k equal pieces and eats one piece. In terms of k, what percent of the pie is left?

(A) $100(k - 1)$ %

(B) $\dfrac{100\,(k - 1)}{k}$ %

(C) $\dfrac{100k}{k - 1}$ %

(D) $\dfrac{k - 1}{100}$ %

(E) $\dfrac{k - 1}{100k}$ %

21. If $x > 0$, what is 30 percent of $15x$?

(A) 0.5x
(B) 2x
(C) 4.5x
(D) 5x
(E) 45x

22. The percent increase from 8 to 14 is equal to the percent increase from 20 to what number?

(A) 14
(B) 26
(C) 28
(D) 32
(E) 35

23.   Which of the following is equal in value to 1 plus (100 percent of 1) ?

       (A) 100 percent of 1
       (B) 101 percent of 1
       (C) 110 percent of 1
       (D) 200 percent of 1
       (E) 201 percent of 1

24.   A store has 660 books in stock. If 30 percent of these books are on sale,
       how many books are not on sale?