

SATPREP

Assignment : Percentage

Easy

1. If 70 percent of x is 28, then what is 30 percent of x ?
 - a) 16
 - b) 12
 - c) 14
 - d) 12
2. 50 percent of 210 is the same as 35 percent of what number?
 - a) 340
 - b) 300
 - c) 350
 - d) 275
3. If 60 percent of 30 percent of a number is 36.54, what is the number?
4. Based on Mrs. Johnson's grading policies, if a student answers 90 to 100 percent of the questions correctly in a math test, she will receive a letter grade of A. If there are 60 questions on the final exam, what is the minimum number of questions the student would need to answer correctly to receive a grade of A?
 - a) 34
 - b) 38
 - c) 42
 - d) 54
5. If John earns \$3,000 a month and he saves \$600 out of his salary, what percent of John's earnings is his monthly savings?
 - a) 15%
 - b) 20%
 - c) 25%
 - d) 30%



6. According to the circle graph above, how many types of automobiles represent less than 30 percent of the total sales?
 - a) 0
 - b) 1
 - c) 2
 - d) 3

7. If 25 percent of x is 250, what is x percent of 50?
- a) 50
 - b) 500
 - c) 520
 - d) 550
8. The percent increase from 6 to 15 is equal to the percent increase from 12 to what number?
- a) 20
 - b) 22
 - c) 24
 - d) 30

Medium

9. In a certain year at Lion High School, exactly 68 out of the 400 students are taking AP Chemistry. What percent of students are NOT taking AP Chemistry that year?
- a) 15
 - b) 17
 - c) 50
 - d) 83
10. If x is the least possible integer for which 35 percent of x is greater than 7.7, what is the value of x ?
- a) 22
 - b) 23
 - c) 24
 - d) 25
11. A family spent \$350 on utilities in January. Due to the weather, they spent 20% more in February. How much did they spend on utilities in February?
12. In a recent town election, 75 percent of the 16,000 people voted. Of the voting people, 60 percent voted for current mayor and 120 votes were invalid. How many people voted for other candidates?



13. Two rectangles X and Y are shown above. If the width of rectangle Y in the figure above is 25 percent less than the width of rectangle X and the length of rectangle Y is 25 percent greater than the length of rectangle X. What is the area of rectangle Y compared to the area of rectangle X?
- The area of rectangle Y is 25 percent less than the area of rectangle X.
 - The area of rectangle Y is 6 percent less than the area of rectangle X.
 - Both rectangles have the same area.
 - The area of rectangle Y is 6 percent greater than the area of rectangle X.

Questions 14 – 15 refer to the following information:

Percent error is useful for determining the precision of a calculation. Percent error close to zero means the calculation is very close to the target value. The formula to measure percent error is:

$$\text{Percent Error} = \frac{\text{Measured Data} - \text{Actual Data}}{\text{Actual Data}} \times 100\%$$

14. The density of water at 4°C is known to be 1.00 g/mL. If Anny experimentally found the density of water be 0.9975 g/mL, what would be her percent error?
- 1.25%
 - 1.25%
 - 0.25%
 - 0.25%
15. Frank got his lab report back with “8.0% error” written in red on it. If he had examined the boiling point of an unknown liquid to be 92 °C, what could be the actual boiling point for his unknown liquid?
- 90.5 °C
 - 85.2 °C
 - 80.3 °C
 - 75.1 °C

16. There are 860 students in the class of 2013, and 45% are boys. How many girls are in the class of 2013?
17. The percent increase from 10 to 14 is equal to the percent increase from 15 to what number?
18. The price of a pair of shoes was first increased by 10 percent and then decreased by 25 percent. The final price was what percent of the original price?
- a) 80%
 - b) 82.5%
 - c) 85%
 - d) 87.5%
19. A movie company invited a total of 500 people to complete their review survey after watching a new release movie. Of the 380 people who finished that survey so far, 55 percent are female and 45 percent are male. Assuming all 500 people will eventually complete the survey, how many of the rest of the respondents must be male in order for half of the total respondents to be male?
20. If the length of a rectangle is increased by 20% and the width of the same rectangle is decreased by 20%, how does the area of the rectangle change?
- a) It is increased by 10%.
 - b) It is increased by 4%.
 - c) It is unchanged.
 - d) It is decreased by 4%.
21. A car salesman's monthly pay consists of \$1000 plus 2% of his sales. If he got paid \$3,000 in a certain month, what was the dollar amount, in thousands, of his sales for that month?

Questions 22 – 23 refer to the following information:

According to research, 90 percent of 20 to 36 month-old children in the United States need to have received measles vaccination in order to achieve herd immunity. In 2013, California did not meet the vaccination goal and

Colorado, Ohio, and West Virginia had 86 percent of 20 to 36 month-olds received the vaccination.

22. If 89 percent of 20 to 36 month-olds received the measles vaccination in California in 2013 and the total number of 20-36 month-olds in California in 2013 is 1.41 million, which of the following could be the number of 20-36 month-olds who have received the measles vaccination in California in 2013?
- a) 1.24 million
 - b) 1.25 million
 - c) 1.26 million
 - d) 1.27 million
23. If the total number of 20 to 36 month-olds in Ohio in 2013 is 0.235 million, how many of 20 to 36 month-olds in Colorado have received the measles vaccination in 2013?
- a) 224,600
 - b) 205,100
 - c) 202,100
 - d) 145,300

Questions 24 – 25 refer to the following information:

The unemployment rate is officially defined as the percentage of unemployed individuals divided by all individuals currently willing to work. To count as unemployed, a person must be 16 or older and have not held a job during the week of the survey. According to the Bureau of Labor Statistics, below is a comparison of the seasonally adjusted unemployment rates for certain states for the months of August and September 2015.

State	Rate (August 2015)	Rate (September 2015)
Nebraska	2.8	2.9
Hawaii	3.5	3.4
Texas	4.1	4.2
Wisconsin	4.5	4.3
Connecticut	5.3	5.2
New Jersey	5.7	5.6
Oregon	6.1	6.2
Alaska	6.6	6.4

24. Among those states shown in the table above, how many states have their unemployment rate drop from August 2015 to September 2015?
- a) 5
 - b) 4
 - c) 3
 - d) 2
25. If about 251,400 residents of New Jersey were unemployed in September 2015, approximately how many New Jersey residents were willing to work in September 2015?
- a) 44,900
 - b) 1,407,800
 - c) 3,251,600
 - d) 4,489,200

Hard

26. A store sells a certain brand of TVs for \$550 each. This price is 25 percent more than the cost at which the store buys one of these TVs. The store employees can purchase any of these TVs at 20 percent off the store's cost. How much would it cost an employee to purchase a TV of this brand?
- a) \$352
 - b) \$330
 - c) \$413
 - d) \$586
27. If increasing 50 by x percent is equal to the result of decreasing 70 by x percent, what is the value of x ?
28. There are 12 more men than women enrolled in a cooking class. If there are M men enrolled, then, in terms of M , what percent of those enrolled are men? Ⓜ
- a) $\frac{100M}{M+12}$ %
 - b) $\frac{100M}{M-12}$ %
 - c) $\frac{100M}{2M+12}$ %
 - d) $\frac{100M}{2M-12}$ %