

# SAT Prep

## Problem Solving -1



# CONCEPTS

# QUESTIONS

1. Suppose you bought something that was priced at \$6.95, and the total bill including tax was \$7.61. What is the sales tax rate (*round-off to the nearest tenth*) in the city?



# QUESTIONS

2. A computer software retailer used a markup rate of 40%. The selling price of a computer game that cost the retailer \$25 is?

# QUESTIONS

3. A shoe store uses 40% markup on the cost price. What is the cost of a pair of shoes that sells for \$63?

# QUESTIONS

4. An item originally priced at \$55 is marked 25% off. What is the sale price?

# QUESTIONS

5. In a mixture of 28 litres, the ratio of milk and water is 5:2. If 2 litres of water is added to the mixture, what is the ratio of milk and water in the new mixture?
- A. 2:1
  - B. 3:2
  - C. 2:3
  - D. 4:3



# QUESTIONS

6. A sum of Rs.7000 is divided among A, B, C in such a way that shares of A and B are in the ratio 2:3 and those of B and C are in the ratio 4:5. What amount does C receive?
- A. 2500
  - B. 2800
  - C. 3000
  - D. 3500



# QUESTIONS

7. Twenty litres of a mixture contains milk and water in the ratio 5:3. If 4 litres of the mixture is replaced by 4 litres of milk, the ratio of milk to water in the new mixture would be ?
- A. 2:1
  - B. 7:3
  - C. 5:2
  - D. 7:2



# QUESTIONS

8. A merchant marks the price of an article 20% above its actual cost and then offers some discount to gain a profit of 10%. By what percentage is the selling price of the article less than the marked price? (Round-off your answer to the nearest tenth)



# QUESTIONS

9. The present age of Alexa and Joe is in the ratio 3:4. Five years back, the ratio of their ages was 2:3. What is the present age of Alexa?
- A. 10
  - B. 15
  - C. 20
  - D. 25



# QUESTIONS

10. Dr. Goldberg, a noted dietician, mixes different solutions as part of her research into sugar substitutes. By weight, she mixes 40% of a sample of A and 70% of a sample of substitute B to create substitute C. If Dr. initially had 60 grams of substitute A and 110 grams of substitute B, then what would be the weight, in grams, of substitute C?

- A. 24
- B. 77
- C. 101
- D. 170



# QUESTIONS

11. In a school survey, 40% of all students chose history as their favourite subject; 25% chose English; and 14 students chose some other subject as their favourite. How many students were surveyed?

# QUESTIONS

12. Max has three hours to study for his tests the next day. He decides to spend  $k$  percent of this time studying for math. Which of the following represents the number of minutes he will spend studying for math?

A.  $\frac{k}{300}$

B.  $\frac{3k}{100}$

C.  $\frac{100k}{180}$

D.  $\frac{180k}{100}$



# QUESTIONS

13. The price of a television was first decreased by 10 percent and then increased by 20 percent. The final price was what percent of the initial price?
- A. 88%
  - B. 90%
  - C. 98%
  - D. 108%



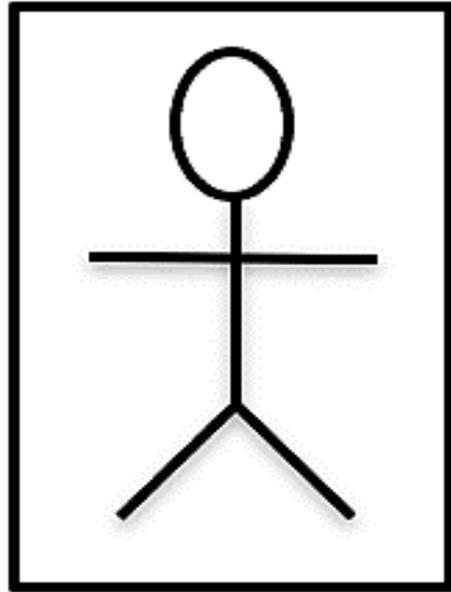
# QUESTIONS

14. In a class, the ratio of the number of science to business students is 4:3. If 14 science students shift to business, the ratio becomes 1:1. What is the total number of students in the class?



# QUESTIONS

15



3 in.

4 in.

If the picture shown above is enlarged proportionally so that the height is now 6 inches, how large of a border would you need so that it would go all around the enlarged picture?

- A. 18 inches
- B. 19 inches
- C. 20 inches
- D. 21 inches

# QUESTIONS

16. Rachelle invested \$1,000 in an IRA paying 6% per year. In how many years will Rachelle's investment be worth \$1,191.02?
- A. 1
  - B. 2
  - C. 3
  - D. 4



# QUESTIONS

17. The length of a rectangle is decreased by 25% while its width is decreased by 20%. The area of the new rectangle is what fraction of the area of the original rectangle?



# QUESTIONS

18. The quantity  $m$  varies inversely to the square of the quantity  $r$ . If  $m = 9$  when  $r = 4$ , what is the value of  $m$  when  $r = 6$ ?
- A. 4
  - B. 6
  - C. 36
  - D. 64



# QUESTIONS

19. A bakery is giving away 600 cookies. The giveaway starts on a busy weekend, and passers by take the free cookies at a constant rate. After 2 hours, the bakery has given away 50% of the cookies. Which of the following equations models the number of cookies,  $C$ , remaining  $h$  hours after the giveaway starts?

A.  $C = 600 - 150h$

B.  $C = 600 - 50h$

C.  $C = 600(0.5)^{h/2}$

D.  $C = 600(0.5)^h$



# QUESTIONS

20.  $g(x) = 570(0.64)^{x/12}$

The function  $g$  gives the value, in dollars, of a certain piece of equipment after  $x$  months of use. If the value of the equipment decreases each year by  $p\%$  of its value the preceding year, what is the value of  $p$ ?

- A. 12
- B. 36
- C. 64
- D. 570





*Thank you*