

PRACTICE
TEST

Delta College Middle School 2004 Mathematics Competition

6th Grade	Problems 1-15
7th Grade	Problems 1-20
8th Grade	Problems 1-25

1. The following table gives the distribution of the favorite color in a class of 7th grade students. What percent of the class chose green, as their favorite color?

Red	Blue	Yellow	Orange	Green	Violet	Brown	Black
4	7	2	3	6	2	0	1

- a. 6% b. 24% c. 12.5% d. 25% e. none of these
2. 10 dimes are initially lined up side by side. Every second dime is replaced by a nickel, and then every third coin by a penny. What is the final value of the money?
a. 53¢ b. 75¢ c. 67¢ d. 57¢ e. none of these
3. A basketball team has a goal of winning 90% of their games. Their record is 10 wins and 2 losses. If they win the rest of their games, how many games are needed to reach the goal?
a. 2 games b. 8 games c. 10 games d. 3 games e. none of these
4. Four members attended the first meeting of a Tennis Club. Each member brings 2 new members to the next meeting. If this pattern continues, how many people will attend the seventh meeting?
a. 256 people b. 128 people c. 2916 people d. 8748 people e. none of these
5. In a class of students, 25 study math and 17 study science. Of these students, 12 study both math and science. How many total students are there?
a. 30 students b. 42 students c. 27 students d. 34 students e. none of these
6. A parking garage charges \$1.50 for the first hour and \$0.75 for each additional hour or part of an hour. How much will it cost Laura to park in the garage for $5\frac{1}{2}$ hours?
a. \$4.50 b. \$5.25 c. \$6.00 d. \$2.25 e. none of these
7. A trip took 8.3 hours (excluding rest time). 72 miles of the trip was by car at 30 mph. The rest of the trip was by train at 80 mph. How far did the train travel?
a. 488 miles b. 48.8 miles c. 472 miles d. 47.2 miles e. none of these

8. Josh has two barrels. The smaller barrel holds 336 liters but is only five-sixths full. He empties this into the other barrel and finds that the second barrel is only four-ninths full. How much will the larger barrel hold when full?
 a. 360 liters b. 280 liters c. 630 liters d. 560 liters e. none of these
9. If the numerator and denominator of a positive proper fraction are increased by the same amount is the new fraction greater than, equal to, or less than the original fraction?
 a. greater than b. less than c. equal to d. not enough information
10. Sarah ran $4\frac{3}{4}$ miles on Monday, $3\frac{1}{2}$ miles on Tuesday, and $5\frac{1}{3}$ miles on Wednesday. If her goal is to run 19 miles per week and she divides the remaining miles left evenly between Thursday and Friday, how many miles must she run on Friday?
 a. $6\frac{5}{24}$ miles b. $3\frac{5}{24}$ miles c. $3\frac{7}{24}$ miles d. $2\frac{17}{24}$ miles e. none of these
11. If you triple the length and width of any rectangle, by what factor will the area increase?
 a. 3 b. 6 c. 9 d. 12 e. none of these
12. A bag contains lemons and limes. The ratio of lemons to limes is 4 to 11. How much fruit is in the bag if there are 44 lemons?
 a. 121 fruit b. 156 fruit c. 16 fruit d. 137 fruit e. none of these

13.

Activity	points awarded	Distance to earn points
Swimming	4	1/2 mile
Walking	5	4 miles
Biking	6	15 miles

Using the above chart, how many points did Julia earn for 45 miles of biking, 3.5 miles of swimming, and 20 miles of walking.

- a. 364 pts b. 50 pts c. 225 pts d. 71 pts e. none of these
14. If $\frac{\overset{\bullet\bullet}{\text{---}}}{\text{---}} = 17$ in the ancient Mayan Number System, then what number is $\frac{\overset{\bullet\bullet\bullet}{\text{---}}}{\text{---}} ?$
 a. 13 b. 8 c. 23 d. 18 e. none of these
15. On Friday night, $\frac{1}{2}$ of the students went to the game, $\frac{1}{3}$ of the rest of the students went to the mall, and the remaining 8 students stayed home. How many students are in the class?
 a. 30 students b. 28 students c. 24 students d. 20 students e. none of these

Grade 6 students should STOP!!!!

16. Find the rule for the question mark

Input	Output
n	?
4	6
6	12
9	21
12	30

- a. $n + 2$ b. $2n$ c. $3(n - 2)$ d. $2n - 2$ e. none of these

17. A post 8 ft high casts shadow 6 ft long. At the same time, a TV tower casts a shadow 30 ft long. Find the distance from the top of the tower to the end of the shadow of the tower.

a. 40 ft b. 52.5 ft c. 50 ft d. 41.9 ft e. none of these

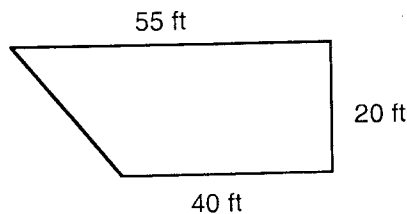
18. Start with the square of 25, divide by 10, and then multiply by the number of sides of a dodecagon. What number do you get?

a. 750 b. 6 c. 72.5 d. 17 e. none of these

19. The number n represents a whole number. Which of the following will NEVER represent an odd number?

a. $2n$ b. $2n+1$ c. $3n+1$ d. $(n+1)^2$ e. $3(n-1)$

20. A fence that cost \$2.50 per foot is built around the plot shown below. How much did it cost to fence the plot?



- a. \$375 b. \$300 c. \$325 d. \$350 e. none of these

Grade 7 students should STOP!!!!

21. A bag contains 7 green marbles and 3 blue marbles. Two marbles are selected out of the bag at once. Find the probability that they are both green.

- a. $\frac{7}{10}$ b. $\frac{2}{3}$ c. $\frac{1}{7}$ d. $\frac{7}{15}$ e. none of these

22. If $x \oplus y = 2x^2 + 5(y - x)$, what does $3 \oplus 7$ equal?

- a. 10 b. 38 c. 92 d. 86 e. none of these

23. A 7 m board was cut into 2 pieces. The longer piece is 20 cm longer than three times the length of the shorter piece. What is the length of the longer piece?

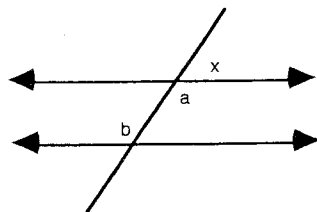
- a. 56 cm b. 5.75 m c. 5.3 m d. 1.7 m e. none of these

24. Natalie has attempted 24 free throws and completed 62.5% of them. How many consecutive free throws will she have to complete if she wants to have an average above 75%?

- a. 12 b. 10 c. 13 d. 3 e. 7

25. Given: 2 parallel lines cut by a transversal

If $\angle x = 51^\circ$, find $\angle a + \angle b =$



- a. 258° b. 102° c. 180° d. 78° e. none of these