Marian's Middle School Math Contest

Sample Test Questions

Individual Test: The individual test will contain 50 multiple choice questions, and students will have 45 minutes to complete the questions. No calculators are allowed on the test. There is no penalty for incorrect answers, so students should fill out an answer for every question.

Sample 6th Grade Individual Test Questions

1. Last month, I spent \$24 on avocados that cost \$0.80 each, and this month I spent \$24 on avocados that cost \$1.20 each. The average cost per magnet was:
    a. \$0.92
    b. \$0.96
    c. \$1.00
    d. \$1.04
2. On a number line, ________ is the same distance from 1.75 as it is from 7.25:
    a. 2.75
    b. 3.25
    c. 3.75
    d. 4.5
3. The sum of 6 consecutive integers, the largest of which is 30, is equal to the sum of 10 consecutive integers, the largest of which is:
    a. 17
    b. 18
    c. 21
    d. 26
4. The sum $12 + 34 + 56$ equals each of the following *except*:
    a. $46 + 56$
    b. $12 + 90$
    c. $34 + 68$
    d. $46 + 68$
5. The sum of the remainders of $123 \div 4, 234 \div 5$, and $345 \div 2$ is:
    a. 3
    b. 6
    c. 8
    d. 12

Sample 7th Grade Individual Test Questions

1. The sum of six consecutive integers *could* be:
    a. 81
    b. 88
    c. 92
    d. 98
2. What is the median of $\frac{1}{6}, \frac{2}{5}, \frac{3}{4}, \frac{4}{3}, \frac{5}{2}$, and $\frac{6}{1}$?
    a. 1
    b. $\frac{669}{360}$
    c. $\frac{7}{12}$
    d. $\frac{25}{24}$
3. Fill in the blank with the number that correctly completes the equation:
   $3 \div \frac{1}{6} = 9 \div$ ____
    a. $\frac{1}{18}$
    b. $\frac{1}{12}$
    c. $\frac{1}{2}$
    d. $\frac{9}{2}$
4. The sum of the two smallest odd factors of 120 is:
    a. 4
    b. 5
    c. 8
    d. 15
5. A new coffee shop opens for the first time on Wednesday, March 2nd. If it is open only on Monday through Friday each week, its 21st day open will be:
    a. March 22nd
    b. March 23rd
    c. March 30th
    d. March 31st

Sample 8th Grade Individual Test Questions

1. If a dog runs at 18 km per hour, how fast is he running in meters per second? Hint: there are 1000 meters in 1 km.
    a. 5
    b. 6
    c. 10
    d. 18
2. if the average of three positive integers is 5, the greatest possible value of the sum of the squares of the three integers is:
    a. 107
    b. 149
    c. 171
    d. 197
3. How many factors of $3 \times 6 \times 9 \times 12 \times 15 \times 18$ are greater than 1 and are perfect squares?
    a. 15
    b. 14
    c. 7
    d. 6
4. Fill in the blank with the number that correctly completes the equation: $(1 + 4 + 1 + 4) \times \_\_\_\_\_ = 14140$.
    a. 10
    b. 1010
    c. 1414
    d. 10000
5. Which of the following has the greatest value?
    a. $9 + 8 \times 6 - 4 \div 2$
    b. $(9 + 8) \times 6 - 4 \div 2$
    c. $9 + 8 \times (6 - 4) \div 2$
    d. $(9 + 8) \times (6 - 4) \div 2$

Team Test: The team test will contain 15 problem solving questions, and students will have 30 minutes to complete these questions. Calculators are allowed for the **8th grade** test only. There is no penalty for incorrect answers, so students should fill out an answer for every question.

Sample 6th Grade Team Test Questions

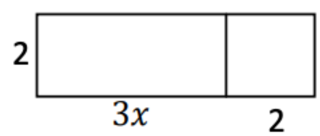
1. If a byte contains eight bits, a kilobyte contains one thousand bytes, and a gigabyte contains one million kilobytes, how many bits are in a gigabyte?
2. In how many different ways can you rearrange the letters ABBC if the two B's cannot be placed next to each other?
3. If you have $200, how many packs of gum can you buy if they cost $0.99 each? (Round your answer to the nearest whole number)

Sample 7th Grade Team Test Questions

1. Simplify $(-1)(-1)(-1) - (-1)(-1)(-1) - (-1)(-1)(-1) - (-1)(-1)(-1)$.
2. Given that $2A = 3B$ and A, B are not zero, what is $\frac{A+A}{B+B}$?
3. A fishbowl weighs 7 pounds when it is full and 5 pounds when it is $\frac{2}{3}$ full. What does it weigh when it is $\frac{1}{4}$ full?

Sample 8th Grade Team Test Questions

1. Write an expression that represents the total area of the figure shown:



2. If a triangle has angle measures x, $3x$, and $0.5x$, what is the measure of the smallest angle in degrees? Hint: The angles of a triangle must add to 180°.
3. Simplify the expression $(2A - 2B)^3$.

Solutions to Individual Test Sample Questions

6th Grade:

1. B
2. D
3. C
4. D
5. C

7th Grade:

1. A
2. D
3. C
4. A
5. C

8th Grade:

1. A
2. C
3. B
4. C
5. B

Solutions to Team Test Sample Questions

6th Grade

1. 8,000,000,000
2. 6
3. 202

7th Grade

1. 2
2. $\frac{3}{2}$
3. 2.5 pounds

8th Grade

1. $6x + 4$
2. $20°$
3. $8A^3 - 24A^2B + 24AB^2 - 8B^3$