NAME _____ SCHOOL _____

2008 Middle School Math Festival **Individual Round: ML Course 1**

1. Calculate $7\frac{5}{7} + 2\frac{1}{2}$.

A. $14\frac{1}{21}$ B. $13\frac{1}{14}$ C. $10\frac{3}{14}$ D. $18\frac{1}{14}$

2. Calculate $2\frac{2}{3} \times 1\frac{2}{3}$.

A. $2\frac{4}{9}$ B. $4\frac{4}{9}$ C. $1\frac{4}{9}$ D. $4\frac{1}{3}$

3. Calculate $45 \div \frac{5}{14}$.

A. $\frac{1}{126}$ B. $\frac{14}{225}$ C. 126 D. $\frac{225}{14}$

4. Write 38,500 in scientific notation.

A. 38.5×10^3 B. 3.85×10^5 C. 385×10^2 D. 3.85×10^4

5. Ponzi saves dimes and quarters. She has 12 coins which add up to \$1.80. How many dimes does she have?

A. 4 dimes B. 8 dimes C. 16 dimes D. 20 dimes

6. Solve for x: $3.2 = x \div 69$

A. 220.8 B. 110.4 C. 65.8 D. 72.2

7. Find the prime factorization of 168.

A. $2^4 \times 3 \times 7$ B. $2^3 \times 3 \times 7$ C. $2^3 \times 3^3 \times 7$ D. $2^4 \times 3^3 \times 13$

8. . Calculate $7\frac{1}{2} - 6\frac{3}{10}$.

A. $1\frac{1}{5}$ B. $1\frac{1}{4}$ C. $13\frac{4}{5}$ D. $1\frac{1}{10}$

9. Find the reciprocal of $\frac{8}{19}$.

A. 8 B. 19 C. $\frac{19}{8}$ D. $\frac{11}{19}$

10. A rope is rated to hold $21\frac{2}{5}$ pounds before it breaks. Estimate (to the nearest whole number) how many $2\frac{5}{8}$-pound weights the rope could support.

A. 2 weights B. 6 weights C. 8 weights D. 11 weights

11. A clothing store offers 2 different styles of jeans in 5 different colors. How many different combinations of style and color are available?

A. 4 combinations B. 7 combinations C. 8 combinations D. 10 combinations

12. Marisa, Jon, and Janet are all related. They are 13, 18, and 20 years old, but not necessarily in that order. Janet is *not* the oldest. The 13-year old is Jon's cousin. Marisa is older than Jon. How old is each person?

A. Janet is 20, Jon is 18, and Marisa is 13
B. Janet is 13, Jon is 18, and Marisa is 20
C. Janet is 20, Jon is 13, and Marisa is 18
D. Janet is 18, Jon is 13, and Marisa is 20

13. Convert 2,231.5 milligrams to grams.

A. 2.2315 g B. 223.15 g C. 22,315 g D. 0.0022315 g

14. Calculate -5 – (-2).

A. 3 B. -3 C. -7 D. 7

15. Mary works in a factory that produces 1,000 telephones per day. When 25 telephones were sampled, it found 6 defective telephones. Estimate how many telephones are defective each day.

A. 250 telephones B. 240 telephones C. 224 telephones D. 254 telephones

16. In a doctor's office, there are 5 different magazines in the waiting room. Virgil randomly flips through the magazines. In how many different orders can he select the magazines?

A. 111 B. 125 C. 116 D. 120

17. Which of the following numbers is *not* a rational number? $\sqrt{11}$, $\sqrt{81}$, $0.68\overline{48}$, -1

A. $\sqrt{11}$ B. $\sqrt{81}$ C. $0.68\overline{48}$ D. -1

18. A right triangle has one leg equal to 20 and the hypotenuse equal to 90. What is the approximate length of the other leg?

A. 20 B. 70 C. 88 D. 92

19. Test 75,243 for divisibility by 2, 3, 5, 9, and 10.

A. 3 B, 3, 5 C. 3, 5, 10 D. 3, 9

20. Simone measures the width of one cardboard strip as ¼ yard. A second cardboard strips measures $\frac{6}{7}$ yard. Estimate the combined width of the cardboard strips, in feet.

A. 2 ¾ feet B. ¾ feet C. 4 feet D. $3\frac{1}{3}$ feet

21. $6\frac{4}{5} + 9\frac{2}{3} \square 16$

A. < B. = C. > D. Cannot determine

22. What is the elapsed time between 7:32 P.M. and 4:27 A.M.?

A. 8 hr 55 min B. 8 hr 40 min C. 10 hr 40 min D. 4 hr 55 min

23. A car travels 136 miles on 7 gallons of gas. At that rate. How far can the car travel using 42 gallons of gas?

A. 22.7 miles B. 816 miles C. 952 miles D. 1,088 miles

24. Estimate a 15% tip for a $26.40 restaurant bill.

A. $1.50 B. $4.00 C. $5.25 D. $6.00

25. While visiting a cousin in another state, you buy a souvenir for $12.00. The sales clerk says the total bill, including tax, is $12.72. What is the sales tax?

A. 6% B. 123 C. 12% D. 72%

26. A lawn trimmer on sale for 45% off. The sales price is $200. What was the approximate original price?

A. $290 B. $310 C. $365 D. $445

27. What is the area of a triangle with a base of 17 feet and a height of 12 feet?

A. 204 ft^2 B. 58 ft^2 C. 102 ft^2 D. 51 ft^2

28. What is the total surface area of a rectangular prism with $l = 15.5$, $w = 16.5$, and $h = 4.5$?

A. 799.5 B. 2,301.75 C. 73 D. 575.4

29. One day at 3:00 A.M., the temperature in Kodiak, Alaska was -11^0 F. At 10:00 A.M., the temperature was 24^0 F. What was the average change in temperature per hour?

A. -35^0 F per hour B. 35^0 F per hour C. -5^0 F per hour D. 5^0 F per hour

30. The coordinates of three vertices of a rectangle are (-1, -3), (-1, -6), and (0, -6). What are the coordinates for the fourth point?

A. (2, -3) B. (2, -5) C. (0, -5) D. (0, -3)