FRANKLIN MATH BOWL

7th Grade Written Test 2003

1. Identify the number sequence that represents a listing of prime numbers.

   A) 0, 1, 2, 3 B) 1, 2, 3, 5 C) 1, 3, 5, 7 D) 2, 3, 5, 7

Recently, a major car manufacturer was having serious financial difficulty. To avoid laying off employees, the union agreed to an across-the-board ten percent (10)% salary decrease.

2. Ms Dunn's contract stated that her annual salary would be $26,500. What is her salary after the decrease?

   A) $26,235 B) $23,850 C) $2,623.50 D) $2,385

3. After a year, the company was financially able to offer the employees a ten percent (10%) raise. What is Ms Dunn's annual salary after the raise?

   A) $26,500 B) $26,235 C) $26,735 D) $29,150

4. Ms Dunn was such a good employee that management decided to make her a line supervisor the next year. They gave her a 12.5% salary increase over her originally contracted salary of $26,500. What is her new salary?

   A) $3,312.50 B) $33,125 C) $29,812.50 D) $2,9881.25

At the Walnut Creek Middle School Harvest Dance, there is a large bucket filled with 90 ping-pong balls. These are for drawing for door prizes. Each ball is numbered with a single-digit natural number. There is an equal number of each digit.

5. What is the probability that you pick a ball having an odd digit?

   A) 45/90 B) 40/90 C) 49/90 D) 5/9

6. What is the probability that you pick a ball having an even digit?

   A) 50/90 B) 45/90 C) 49/90 D) 4/9

7. **Which expression represents the probability of picking two balls (non-replacement) having odd digits?**

A) (45/90) x (44/89) B) (5/9) x (1/2)

C) (50/90) x (49/89) D) $1-(50/90)$

8. **What is the probability of picking up a number that represents a multiple of ten?**

A) 1/11 B) 1/10 C) 1/9 D) zero

9. **Evaluate** $\frac{6!}{24}$

A) 24 B) 1 / 4 C) 5 /4 D) 30

10. **Evaluate** $5.25 \div \frac{14}{56}$

A) 21 B) 1.3125 C) 73.5 D) 0.76

11. **What is the complement and supplement of** $\angle 64^\circ$ **?**

A) $26^\circ, 116^\circ$ B) $116^\circ, 26^\circ$ C) $116^\circ, 296^\circ$ D) $296^\circ, 116^\circ$

12. **Evaluate** $\left(\frac{-1}{3}\right)^2 \div \left(\frac{-1}{2}\right)^3$

A) $\frac{1}{72}$ B) $\frac{-8}{9}$ C) 1 D) $\frac{-1}{36}$

13. **Evaluate** $-12+6\div 3+3\times 6$

A) 30 B) 8 C) 216 D) 6

14. Katie is hoping to make an A in her math class. She has taken 4 of the 5 tests for this grading period. She scored 94, 92, 89, and 93. The teacher assigns the test score using only whole numbers. If the grading scale is $A \geq 92.5$, what must she score on the last test to achieve her goal? (s represents the score on test #5)

A) $s \geq 94$ B) $s \leq 95$ C) $s \geq 95$ D) $s = 94.5$

15. Evaluate $-|-5|$

A) -5 B) 5 C) 0 D) 1

16. Sam deposited $375 into a money market account. The account yields an interest of $30 after one year's investment. What is the rate the account is paying?

A) 3% B) 30% C) 8% D) 1.08%

17. The trip from the school to home is 18 miles. This morning, it took 40 minutes. What was the average speed in miles per hour?

A) .45 mph B) 45mph C) 30 mph D) 27 mph

18. You have 2 circles. The smaller circle has a radius of 1 and the larger circle has a radius of 6. What is the ratio of the circumference of the larger circle to the smaller circle?

A) 6:1 B) 1:6 C) 2:36 D) 36:1

19. How many lines of symmetry does a regular hexagon have?

A) 3 B) 2 C) 6 D) 12

20. On a trip of 299 miles, the chess team used 13 gallons of gasoline. What was the average mileage per gallon?

A) 23 mpg B) .043 mpg

C) 30 mpg D) not enough information

21. What is the product of the smallest prime and the 6th prime?

A) 22 B) 26 C) 12 D) 11

22. Which list represents the composite factors of 12?

A) 1,2,3,4,6,12 B) 4,6,12 C) 1,2,3 D) 2,3

23. Which sequence of numbers equates to the following listing?

$$2^{-2}, 2^{-1}, 2^{0}, 2^{1},$$

A) $-2,-1,0,1,$ B) $-4,-2,0,2,$

C) $\frac{1}{4},\frac{1}{2},0,2,$ D) $\frac{1}{4},\frac{1}{2},1,2,$

24. The Concord's ground speed is 900 miles per hour. How many miles does it travel in 1 minute?

A) 90 miles B) 60 miles C) 30 miles D) 15 miles

25. Your class is making paper cones to hold popped corn for field day. Using large sheets of construction paper, you make two patterns for regular cones. The red cone has a diameter of 8 inches and a height of 10 inches. The blue cone has a diameter of 10 inches and a height of 8 inches. Which cone would hold the most popcorn?

A) the red one B) the blue one

C) they hold same amount D) not enough information