

**FRANKLIN MATH BOWL**  
**Seventh Grade Exam – 2007**

1. In the expression  $13 + 3 * 4 \div 5 - 1$ , which operation should be performed first?  
A. addition                      B. subtraction                      C. multiplication                      D. division
2. Evaluate:  $|21 - 22.5|$   
A. 1.5                      B. -1.5                      C. 2.5                      D. not given
3. Which is the prime factorization of 225?  
A.  $9 \times 25$                       B.  $2 \times 3 \times 3 \times 5 \times 5$   
C.  $15 \times 15$                       D.  $3 \times 3 \times 5 \times 5$
4. What is the least common multiple for 9, 27, and 36?  
A. 3                      B. 9                      C. 108                      D. 324
5. Evaluate  $3y^2 + 2y$  if  $y = 10$   
A. 50                      B. 320                      C. 920                      D. not given
6. Simplify  $3a^2 + 2a + 4a + a^2 + -3a$   
A.  $7a^2$                       B.  $3a^2 + 4a$                       C.  $4a^2 + 9a$                       D.  $4a^2 + 3a$
7. Which of the following is **not** an irrational number?  
A.  $\sqrt{2}$                       B.  $\sqrt{9}$                       C.  $\sqrt{14}$                       D.  $\pi$
8. When a point lies on the  $x$ -axis in a coordinate plane, which statement must be true?  
A. The  $y$ -coordinate is 0.  
B. The  $x$ -coordinate is 0.  
C. The  $x$ -coordinate is less than the  $y$ -coordinate.  
D. The  $x$ -coordinate is greater than the  $y$ -coordinate.

Use the table for questions 9-11.

Student	Hourly Wage
Sammy	\$7
Pamela	\$5
Wesley	\$5
Trisha	\$4
Angie	\$23
Elizabeth	\$9

9. What is the mode of the hourly wages?  
A. 4      B. 5      C. 23      D. There is no mode.
10. What is the median of the hourly wages?  
A. 4.5      B. 5      C. 6      D. 7
11. What is the mean of the hourly wages *without the outlier*?  
A. 5      B. 6      C. 8.8      D. 9
12. What is the measure of the complement of an angle which measures  $72^\circ$ ?  
A.  $18^\circ$       B.  $28^\circ$       C.  $108^\circ$       D.  $288^\circ$
13. Mary has 11 gallons of lemonade that she needs to divide into pints to sell for her school fundraiser. How many pint containers does she need?  
A. 44      B. 88      C. 176      D. 352
14. Find the area of a circle with a diameter of 8 cm.  
A.  $64\pi \text{ cm}^2$       B.  $16\pi \text{ cm}^2$       C.  $8\pi \text{ cm}^2$       D.  $4\pi \text{ cm}^2$
15. The minimum size of a soccer field for players under 8 years of age is 20 yards by 30 yards. About how long is the diagonal distance on a field with these dimensions?  
A. about 12 yards      B. about 25 yards  
C. about 36 yards      D. about 45 yards
16. A spinner has 10 equal sections numbered 1 through 10. What is the probability that the spinner will land on a prime number?  
A.  $\frac{1}{3}$       B.  $\frac{1}{2}$       C.  $\frac{2}{5}$       D.  $\frac{3}{5}$
17. The surface area of a cube is  $150 \text{ cm}^2$ . What is the volume of the cube?  
A.  $125 \text{ cm}^3$       B.  $225 \text{ cm}^3$       C.  $750 \text{ cm}^3$       D. not given

18. 25 is what percent of 80?  
A. 20%      B.  $31\frac{1}{4}\%$       C. 32%      D. not given
19. Given the numbers, -3, -2, -1,  $-\frac{1}{2}$ , 0,  $\frac{1}{2}$ , 1, 2, and 3. How many of these numbers have values less than their respective reciprocals?  
A. 2      B. 3      C. 4      D. 7
20. Twenty percent of the people in a survey chose green as their favorite color. If 46 people chose green, how many people were surveyed?  
A. 66 people      B. 230 people  
C. 460 people      D. 920 people
21. What is the measure of each interior angle of a regular hexagon?  
A.  $120^\circ$       B.  $135^\circ$       C.  $150^\circ$       D.  $160^\circ$
22. A girl who is four and a half feet tall is standing next to a telephone pole. At 1:00 p.m., the girl casts a shadow 8 feet long, and the telephone pole casts a shadow 36 feet long. How tall is the telephone pole?  
A. 20 feet, 0.25 inch      B. 22 feet, 1 inch  
C. 20 feet, 4 inches      D. 20 feet, 3 inches
23. If the mean, median, and mode are all equal for the set {3, 4, 5, 8, x}, what is the value of x?  
A. 5  
B. 8  
C. 10  
D. The mean, median, and mode cannot be equal.
24. The sum of nine consecutive odd whole numbers is 243. What is the sum of the first and last odd whole number in this nine-addend set?  
A. 27      B. 38      C. 54      D. 70
25. If you use the eight digits 1, 2, 3, 4, 5, 6, 7, and 9 each once and only once to form 4 two-digit prime numbers, what will be the sum of the four prime numbers you created?  
A. 190  
B. 253  
C. 172  
D. 235

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**Answer Key**

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1. C
2. A
3. D
4. C
5. B
6. D
7. B
8. A
9. B
10. C
11. B
12. A
13. B
14. B
15. C
16. C
17. A
18. B
19. B
20. B
21. A
22. D
23. A
24. C
25. A