FRANKLIN MATH BOWL
8th GRADE EXAM
2003

1. Which number should come next? 64, 16, 4, 1, ¼,

a. 1/16 b. 1/12 c. 1/8 d. ½

2. What number is one half of one quarter of one tenth of 800?

a. 8 b. 10 c. 20 d. 40

3. Two cars start off at the same point on a straight highway facing opposite directions. Each car drives for 6 miles, takes a left turn, and drives for 8 miles. How far apart are the two cars?

a. 2 miles b. 11 miles c. 14 miles d. 20 miles

4. If x - 4 is 2 greater than y, then x + 5 is how much greater than y?

a. 1 b. 7 c. 9 d. 11

5. If a rectangle has sides of $2x$ and $3x$ and an area of 24, what is the value of x?

a. 2 b. 3 c. 4 d. 6

6. In a class of 50 students, 18 take music, 26 take art, and 2 take both art and music. How many students in the class are not enrolled in either music or art?

a. 4 b. 6 c. 8 d. 16

7. When y = 3, which of the following is FALSE?

a. y is prime and y is odd

b. y is odd or y is even

c. y is not prime and y is odd

d. y is odd and 2y is even

8. The product of 2^3 and 4^2 is equivalent to

a. 2^7 b. 2^{12} c. 8^5 d. 8^6

9. Simplify $[-5-(-22)]$.

a. –27 b. –17 c. 17 d. 27

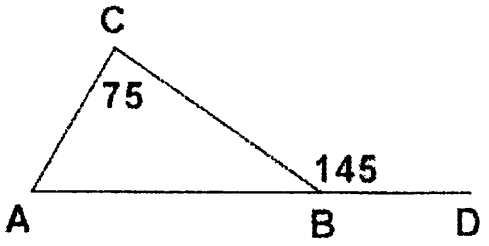
10. The value of -3^2 is

a. –9 b. –3 c. 3 d. 9

11. At a concert, $720 was collected for hot dogs, hamburgers, and soft drinks. All three items sold for $1.00 each. Twice as many hot dogs were sold as hamburgers. Three times as many soft drinks were sold as hamburgers. The number of soft drinks sold was

a. 120 b. 240 c. 360 d. 480

12. The diagram below shows triangle ABC with segment AB extended to point D, exterior angle CBD measuring 145°, and angle ACB measuring 75°. What is the measure of angle CAB?



a. 35° b. 70° c. 110° d. 220°

13. Braden is measuring the height of an oak tree in his yard. Braden is 4 feet tall and his shadow is 7 feet long. The oak tree's shadow, at the same time of day, is 28 feet long. How tall is the oak tree?

a. 16 ft b. 36 ft c. 49 ft d. 100 ft

14. If 6 and x have the same mean (average) as 2, 4, and 24, what is the value of x?

a. 5 b. 10 c. 14 d. 16

15. In a magazine, 30 pages of the 80 pages are devoted to sports. What percent of the magazine is devoted to sports?

a. 3.75% b. 24% c. 27% d. 37.5%

16. A fair coin is thrown in the air four times. If the coin lands with the head up on the first three tosses, what is the probability that the coin will land with the head up on the fourth toss?

a. 0 b. 1/2 c. 1/8 d. 1/16

17. A movie theater sells 3 sizes of popcorn (small, medium, and large) with 3 choices of toppings (no butter, butter, extra butter). How many possible ways can a bag of popcorn be purchased?

a. 3 b. 9 c. 12 d. 27

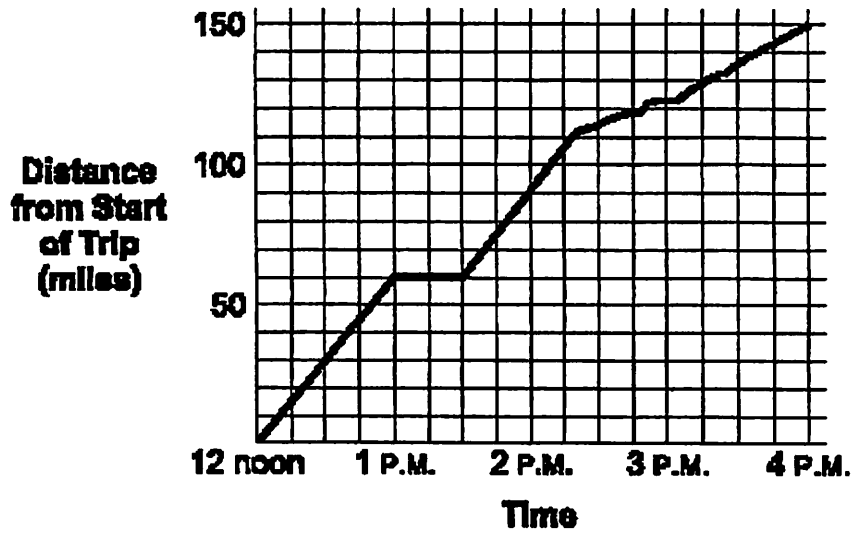
18. Of the 32 students in a math class, three times as many students prefer pizza as prefer hamburgers. How many students prefer pizza?

a. 6 b. 8 c. 20 d. 24

19. At a carnival booth you can win a prize by guessing the color of a marble to be drawn from a jar. If you know there are 25 red, 25 green, 25 yellow, and 25 blue marbles in the jar, what are your chances of winning a prize on your first try?

a. 1 out of 4 b. 1 out of 25 c. 4 out of 25 d. 25 out of 75

20. The graph below shows the distance traveled during a car trip. Use the graph to answer question 20.



Which most likely took place between 1 P.M. and 1:30 P.M.?

a) slow-moving traffic because of construction

b) highway driving at 70 mph

c) stop-and-go driving

d) stop for lunch

21. Find the product of the missing numbers in these sequences:

81, 27, _____, 3, 1, ...

1, 4, 9, _____, 25, ...

2, 6, 12, _____, 30, ...

a) 1728 b) 2160 c) 2592 d) 2880

22.

Pictured above are signs advertising sales at two stereo equipment stores. The original price of a CD player is $90 at both stores. What is the final sale price at Store B?

a. $45 b. $49.16 c. $50.40 d. $63

23. 5/6 of a number is 2500. What is 2/3 of that number?

a. 1500 b. 2000 c. 2500 d. 3000

24. During the final game of a basketball tournament, only 7 players from the tournament-winning team played. The scoring average of all 7 players was 13. The scoring average of everyone but the point guard was 12. How many points did the point guard score?

a. 14 b. 16 c. 19 d. 21

25. The ratio of overtime pay to regular pay is 3:2. If Margaret earns $72 for a regular 8-hour day, what does she earn for 3 hours of overtime?

a. $9.00 b. $13.50 c. $36.00 d. $40.50