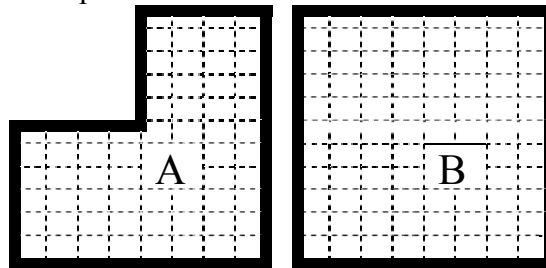# Franklin Math Bowl
7th Grade Test 2008

1. Which of these is a prime number?
(A) 121   (B) 217   (C) 131   (D) 221

2. The least common multiple of 78 and 60 is
(A) 6   (B) 780   (C) 720   (D) 390

3. What is the 100th digit after the decimal point of the repeating decimal $0.\overline{738401}$?
(A) 4   (B) 3   (C) 0   (D) 7

4. Compute and answer in lowest terms: $\dfrac{2\frac{5}{8} \times 4\frac{1}{6}}{\frac{1}{7} \div \frac{5}{14}}$

(A) $95\dfrac{45}{64}$ (B) $214\dfrac{3}{8}$ (C) $20\dfrac{25}{96}$ (D) $27\dfrac{11}{32}$

5. (8 weeks 5 days) − (4 weeks 6 days) = ?
(A) 3 weeks 6 days   (B) 4 weeks 1 days   (C) 13 weeks 4 days   (D) 3 wk 4 d

6. Figure *A* below is changed into Figure *B* by moving some sides. What can be said about their area and perimeter?

(A) The area of A is greater than the area of B, and the perimeters are the same.
(B) The area of B is greater than the area of A, and the perimeters are the same.
(C) The area of A is less than the area of B, but the perimeter of A is greater than the perimeter of B.
(D) The area of A is less than the area of B, and the perimeter of A is less than the perimeter of B.

7. The crust of a certain pumpkin pie is 25% of the pie. By what percent should the amount of crust be reduced to make it constitute 20% of the pie?
(A) 20%   (B) 5%   (C) 40%   (D) 50%

8. Josh and Brandon start reading a novel on the same day. Josh reads 8 pages a day, and Brandon reads 6. At the end of one day, Josh is on page 72. What page is Brandon on?
(A) 70   (B) 48   (C) 54   (D) 56

9. A two-volume encyclopedia is sitting on a shelf in the proper order with volume 1 on the left and volume 2 on the right. Each cover is ⅛ inch thick. The pages portion of each book is 2 inches thick. A bookworm starts on the last page of Volume 2 and eats her way through to the first page of Volume 1. How far does she travel?
(A) 2⅛ inches (B) 2¼ inches (C) 4¼ inches (D) ¼ inch

10. On a map of Tennessee, McMinnville and Mufreesboro are $1\frac{7}{8}$ inches apart. The scale on the map says that $1\frac{1}{16}$ inches represents 20 miles. How far are the two cities from each other? (direct miles, not road miles)
(A) $35\frac{5}{17}$ mi   (B) 11⅓ mi   (C) 18¾ mi   (D) 75 mi

11. Find the median of 68, 40, 29, 98, 81, 25, 92, 41, 85, and 34.
(A) 59.3   (B) 54.5   (C) 53   (D) 65.5

12. Find the mean of 68, 40, 29, 98, 81, 25, 92, 41, 85, and 34.
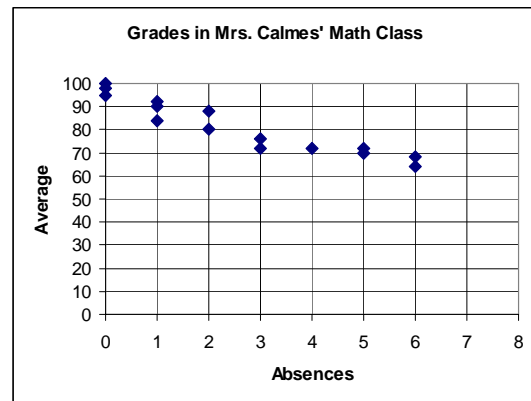(A) 59.3   (B) 54.5   (C) 53   (D) 65.5

13. The vertex angle of an isosceles triangle measures 38°. What is the measure of each of the other two angles?
(A) 38°   (B) 71°   (C) 142°   (D) 52°

14. This scatter plot shows the averages of some students in Mrs. Calmes' 7th grade math class compared with the number of absences one six weeks. Use the graph to predict which of these would be a reasonable prediction for the grade of a person who missed 8 classes.
(A) 25 (B) 72 (C) 52 (D) 67

Grades in Mrs. Calmes' Math Class

15. The number of people who participated in band this year is about 135% of the people who did last year.
If there are 113 people in band this year, about how many were in the band last year?
(A) 153   (B) 119   (C) 78   (D) 84

16. Rakesh took out a loan for two years at 4.39% simple interest. If he borrowed $3816, how much did he pay back in interest?
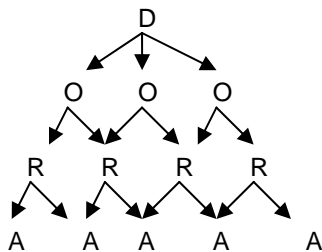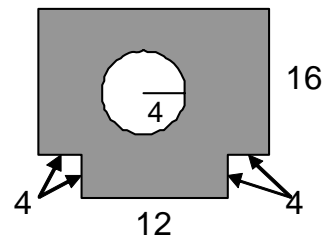(A) $335.04   (B) $167.52   (C) $4151.04 (D) $72.97

17. The letter G is transformed twice as follows: $\mathbb{G} \to \mathbb{O} \to \mathbb{C}$

The same two transformations on an L look like this: $\mathrel{L} \to \mathrel{\daleth} \to \mathrel{\Gamma}$
What would be the result of these two transformations on an R?

(A) ⌐R   (B) ⌐d   (C) ⌐b   (D) ⌐S

18. How many different lines of symmetry could you have in a regular pentagon?
(A) 2   (B) 5   (C) 10   (D) 8

19. An Xbox game and two DVDs bought together cost $118. The game cost $31 more than either DVD. How much did each DVD cost?
(A) $27   (B) $15.50   (C) $29   (D) $43.50

20. In the figure at right, all dimensions are in centimeters, and all angles are right angles. Which of these is closest to the area of the shaded region?
(A) 318 cm^2 (B) 350 cm^2
(C) 343 cm^2 (D) 371 cm^2

21. How many different ways are there on the diagram at left to spell the name "Dora"?
(A) 7 (B) 12 (C) 8 (D) 13

22. What is the product of the second and eighth prime numbers?
(A) 57   (B) 51   (C) 95   (D) 69

23. A car was clocked going down the road at 64 miles per hour. To the nearest whole mile, how far did it travel in 32 minutes?
(A) 34 mi   (B) 2048 mi   (C) 20 mi   (D) 32 mi

24. What comes next in this sequence?
Z, O, T, T, F, F, S, S, E, N, T, ___
(A) E   (B) T   (C) O   (D) F

The last problem will be used as a tie-breaker. You must show your work for the last problem in the space provided on your answer sheet.

25. One cubic foot of water is about 7.5 gallons and weighs about 62.4 pounds. The town of Slugville has a cylindrical water tower with a diameter of 76 feet and a height of 52 feet. Which of these is closest to the weight of the water in the tank when it is completely full? (These are all rounded numbers.)
(A) 1,769,220 lb   (B) 14,719,900 lb
(C) 58,879,620 lb   (D) 7,076,880 lb

FMB 2008 Grade 7 Test Answers

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