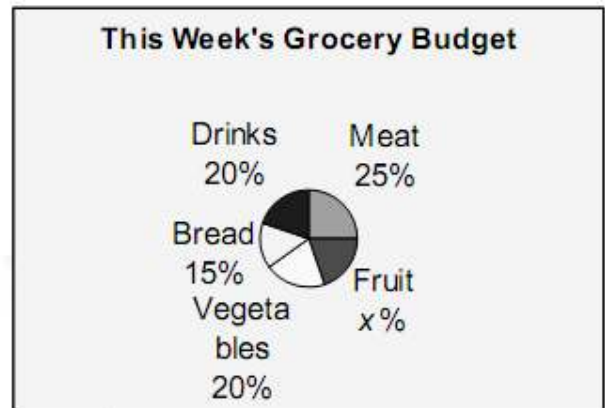# Franklin Math Bowl
6th Grade Contest 2009

1. Which of these is equal to half a million?

(a) $\dfrac{1}{200,000}$ (b) .000005 (c) 500,000 (d) 20,000

2. Which of these fractions is least?

(a) $\dfrac{13}{12}$ (b) $\dfrac{32}{31}$ (c) $\dfrac{20}{19}$ (d) $\dfrac{54}{53}$

3. 37,000 is how many times 3.7?

(a) 10   (b) 100   (c)   1000 (d) 10,000

4. Two number cubes are rolled. What is the probability that the sum of the numbers rolled is 5?

(a) $\dfrac{1}{9}$ (b) $\dfrac{5}{36}$ (c) $\dfrac{5}{6}$ (d) 0

5. If $P \div 3 = Q$, what is the value of $P \div 12$?

(a) $4Q$ (b) $Q \div 36$ (c) $Q \div 4$ (d) $Q \div 9$

6. Ms. Henderson and Ms. Little ate lunch together. Later Ms. Berg joined them. The waiter brought one bill for $18.97 for the first two and another for $9.21. If they go together to leave a 15% tip, about how much should they leave to pay the total bill?

(a) $39.95   (b) $32.50   (c) $29.00   (d) $9.70

7. The graph at right shows a family's grocery budget for this week. What percent of this week's grocery budget was for fruit?

(a) 15%   (b) 80%
(c) 23%   (d) 20%

This Week's Grocery Budget

Drinks 20%   Meat 25%   Bread 15%   Vegetables 20%   Fruit x%

8. What unit of measure would be most appropriate for measuring the height of a student textbook?

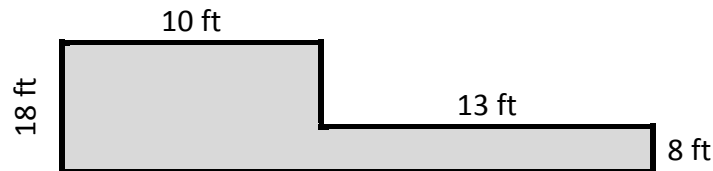(a) Meter   (b) Kilometer
(c) Liter   (d) Centimeter

9. The table shows the population of Central City for 2000 and 2001. The population grew by the same percentage for each of the next two years. About what was the population of Central City in 2004?

Year	Population
2000	10,000
2001	11,000

(a) 13,000   (b) 12,500

(c) 14,600   (d) 16,100

10. A map has a scale of 1 inch: 20 miles. The distance on the map from Fairview to Mount Pleasant is 6½ inches. How far apart are the two cities?

(a) 3 miles   (b) 54 miles   (c) 130 miles   (d) 26½ inches

11. The fourth grade class has 27 girls and 23 boys. What percentage of the class is girls?

(a) 54%   (b) 46%   (c) 50%   (d) 27%

12. A Model 300 bus seats 50 passengers. How many buses will be needed to take a group of 223 students and adult helpers on a field trip?

(a) 4   (b) 5   (c) 6   (d) 8

13. The probability that a certain child will drop his toast where the jelly side hits the floor has been calculated as ⅔. If he drops 60 pieces of toast, how many times would you expect the toast to land jelly side down?

(a) 40   (b) 90   (c) 20   (d) 45

14. The Parker family wishes to re-tile their kitchen. The floor plan looks like the figure below. The tiles they selected are one square foot in size and come in 10-tile cartons. How many cartons do they need?

(a) 28   (b) 29   (c) 31   (d) 42

15. Which of these is the largest number?

(a) $\frac{3}{5}$ (b) $\frac{2}{3}$ (c) $\frac{11}{15}$ (d) 0.71

16. A rectangle has an area of 18 square inches. One side is 2 inches long. What is the perimeter of the rectangle?

(a) 18 inches   (b) 22 inches   (c) 38 inches   (d) 11 inches

17. Here is a table showing different pairs of values for x and y. Which equation shows the relationship between x and y?

x	1	2	3	4	5	6
y	6	10	14	18	22	26

    (a) $y = 4(x - 2)$ (b) $y = x + 5$ (c) $y = 5x + 1$ (d) $y = 4x + 2$

18. Using the same table, what is the value for y if $x = 9$?
    (a)   144   (b) 38   (c) 46   (d) 28

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19. The area of a circle is 121π cm². What is its circumference?
    (a) 1331π cm   (b) 11π cm   (c) 5.5π cm   (d) 22π cm

20. Solve: $m - 8\frac{2}{3} = 6\frac{2}{5}$.
    (a) $\frac{48}{65}$ (b) $2\frac{4}{15}$ (c) $14\frac{4}{15}$ (d) $15\frac{1}{15}$
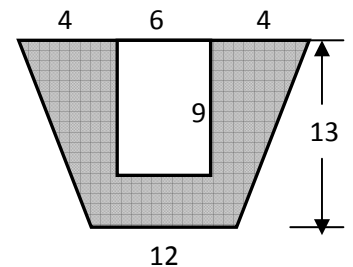
21. Solve: $3y - 5 = 19$.
    (a) $4\frac{2}{3}$ (b) 8   (c) 21   (d) 72

22. Add: 27 cm + 8.5 m + 90 mm
    (a) 125.5 cm   (b) 967 cm   (c) 886 cm   (d) 862 cm

23. Find the area of the shaded part of the figure at right. All measurements are in centimeters.
    (a) 115 cm²   (b) 137 cm²   (c) 150 cm²   (d) 195 cm²

24. A school has a math club, a science club, and a band. There are 159 students who are in at least one of these organizations. (Some are in two or all three.) The band has 102 students, the science club has 86, and the math club 93. There are 12 students who are in all three, and 35 are in band and science but not math. 23 students are in science and math clubs but not band. 18 students are in the math club but not the others. How many students are in the band and the math club, but not the science club?
    (a) 16   (b) 15   (c) 40   (d) 52

The last problem may be used as a tie breaker. Please show your work on the Scan-Tron sheet in the space provided.

25. How many whole numbers between 99 and 999 are divisible by 6, 9, and 12?
    (a) 13   (b) 25   (c) 27   (d) 36