2005 FRANKLIN MATH BOWL
Sixth Grade Exam

INSTRUCTIONS: Choose the *single best* solution for each problem.

1. Solve for r.

    $$r = 0.042 \times 30.2$$

    a. r = 1268.4   b. r = 12.684   c. r = 12684   d. r = 1.2684

2. Mr. Jackson wants to plant his newly landscaped yard with grass seed. Each bag of seed is supposed to cover 70 square feet of ground. Mr. Jackson's front yard is 148 square feet and his side and back yards, combined, are 233 square feet. How many bags of seed will Mr. Jackson need to buy (assuming he doesn't already have some on hand)?

    a. 3 bags   b. 6 bags   c. 5 bags   d. 4 bags

3. Round 363,636 to the nearest thousands place.

    a. 360,000   b. 363,640   c. 364,000   d. 400,000

4. A sports arena has 18,000 seats. About two-thirds of the seats are sold for each event. If tickets cost $32 per seat, approximately how much money would the arena collect for a season with 10 sporting events?

    a. $3,840,000   b. $480,010   c. $576,000   d. $1,803,200

5. Find the correct amount.

    $$25\% \text{ of } 3624$$

    a. 144.96   b. 906.   c. 14496   d. 3599

6. Josh is making campaign posters for the student council election. He has 6 markers of different colors and 4 colors of poster paper. How many different color combinations of paper and marker are possible (assuming he uses only one color of ink on any particular poster)?

   a. 2 b. 10 c. 24 d. 32

7. What is the true relation between the given fractions?

   $$\frac{5}{9} \text{ and } \frac{9}{17}$$

   a. $\frac{5}{9} > \frac{9}{17}$ b. $\frac{5}{9} < \frac{9}{17}$ c. $\frac{5}{9} = \frac{9}{17}$ d. $\frac{5}{9} \le \frac{9}{17}$

8. If you roll one *fair* die (i.e., a 1-6 cube), what is the probability of rolling an odd number that is not a 3?

   a. $\frac{1}{6}$ b. $\frac{1}{3}$ c. $\frac{1}{2}$ d. $\frac{1}{4}$

9. Find the least common multiple for the following set of numbers:
   5, 8, and 12.

   a. 84 b. 108 c. 60 d. 120

10. Simplify the following expression: p(1 - n) - 2p(1 - n)

   a. - p - 3pn b. 3pn - p c. pn - p d. 3pn

11. Find the correct amount.

$$\frac{3}{5} \text{ of } 35$$

a. 25   b. 59   c. 21   d. 8

12. A square playground has an area of 2025 square meters. What is the length of one side of the playground?

a. 81 m   b. 1013 m   c. 625 m   d. 45 m

13. Solve for y.

$$1\frac{3}{4} \div \frac{7}{8} = y$$

a. $y = 2$ b. $y = \frac{7}{8}$ c. $y = 2\frac{5}{8}$ d. $y = 1\frac{17}{32}$

14. Which set of measures (in degrees) CANNOT be the correct angles of a single triangle?

a. {25, 65, 90}   b. {40, 60, 85}   c. {45, 55, 80}   d. {55, 60, 65}

15. Solve for x.

$$8^5 \div 8^2 = x$$

a. $x = 8^3$ b. $x = 8^7$ c. $x = 8^{10}$ d. $x = 8^{2.5}$

16. Find the mean, median, and mode, respectively, for the following set of data.

        11   5   14   10   7   11   11   9   12

a. 10, 10, 11   b. 10, 11, 12   c. 12, 11, 10   d. 10, 11, 11

17. Solve for m.

$$1\frac{3}{5} + 3\frac{1}{3} + \frac{2}{15} = m$$

a. $m = \dfrac{64}{15}$ b. $m = \dfrac{681}{225}$ c. $m = \dfrac{76}{15}$ d. $m = \dfrac{98}{23}$

18. What is the closest integer to the left of $-6\frac{2}{3}$ on a number line?

a. 6   b. -7   c. 7   d. -6

19. Bananas are on sale for 48 cents per pound at the grocery store. You pick a bunch of bananas that weighs 38 ounces. What is the price (before tax) of these bananas?

a. $0.96   b. $1.50   c. $1.83   d. $1.14

20. Solve for w.

$$\frac{86}{w} = \frac{43}{24}$$

a. w = 0.02   b. w = 12   c. w = 48   d. w = 0.08

21. Ron scored 92% on his last History test. He answered 46 questions correctly. How many questions were on the test?

    a. 50   b. 56   c. 70   d. 62

22. A car rental company has a weekend special that charges $40 per day plus 30 cents per mile, or fraction thereof, to rent a car. How many miles can be driven in 3 days before the total charge (before tax) exceeds $300.00?

    a. 180   b. 600   c. 420   d. 999

23. A point is located on the line 6x - 4y = 12. If the first coordinate of this point is 4, what is the second coordinate?

    a. 8   b. 6   c. 4   d. 3

24. What is the sum of the difference between 0.7 and 0.3 and the product of 0.7 and 0.3?

    a. 1.21   b. 0.61   c. 0.79   d. 0.24

25. Two people, alone in a room, have an average age of 12 years. A third person enters and now the average age of the people in the room is 15 years. What is the age of this third person?

    a. 21   b. 25   c. 18   d. 45