1. What is the smallest number of coins needed to make 47¢?

   1. _____

2. Calculate: $6 + 4 \times 3$.

   2. _____

3. 84 is 40% of what number?

   3. _____

4. How many sets of five paintings can a museum curator choose from a collection of eight paintings?

   4. _____

5. The number of rounds of golf played by each golfer of an amateur golf association is shown in the chart below. What is the average number of rounds played by each golfer? Express your answer to the nearest whole number.

   5. _____

Rounds of Golf Played
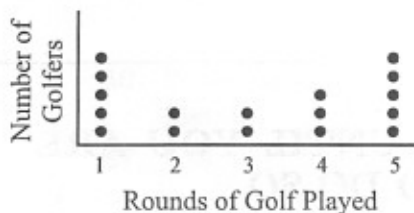
6. What is the value of $a + b + c$ if $4 \cdot 6 \cdot 30 = 2^a \cdot 3^b \cdot 5^c$?

   6. _____

7. If two figures can be made to look the same by rotations or reflections, they are not considered unique. How many unique two-dimensional figures can be formed by fitting four congruent squares together so that adjacent squares share an entire edge? (Squares may not overlap.)

   7. _____

8. The sum of four different positive integers is 90. What is the maximum value possible for the second-largest integer?

   8. _____

9. The two squares shown each have an area of 1 square meter. W is the center of one square and a vertex of the other. What is the number of square meters in the shaded area? Express your answer as a common fraction.

   9. _____

10. Compute: $\dfrac{(3!)^6}{(3!)^3}$.

   10. _____

11. A school is creating a four-digit student code system. For security reasons, the code cannot start with an even number. How many codes are possible?

11. _____

12. A basketball player makes her free throws 55% of the time. What is the probability that she will make both of her next two free throws? Express your answer as a common fraction.

12. _____

13. How many more complete revolutions will a wheel with a circumference of 3 feet make than a wheel with a circumference of 4 feet in traveling one mile?

13. _____

14. The number 25 can be written as the sum of two or five consecutive whole numbers. What is the positive difference between the products of the numbers in each set?

14. _____

15. A new sports stadium has a seating capacity of 24,000 people. One-fifth of the seats are box seats, and $\frac{5}{8}$ of the remaining seats are reserved seats; all other seats are general admission. How many seats are general admission?

15. _____

16. In a class of 180 eighth-grade students, 80% went to the Science Museum. Ninety percent of the boys and 90 girls went on this trip. How many girls are in the eighth-grade class?

16. _____

17. The quarters, dimes, nickels, and pennies in Jeremy's pocket total $2.35. He has as many quarters as pennies, as many dimes as nickels, and fewer quarters than dimes. How many dimes does he have?

17. _____

18. By hitting a target, Juanita can score 16, 17, 23, 26, 29 or 40 points with each arrow. What is the fewest arrows she can shoot to score exactly 100 points?

18. _____

19. The endpoints of a diagonal of a rectangle are $(-4, -5)$ and $(3, 4)$, and the sides of the rectangle are parallel to the axes. How many square units are in the area of the rectangle?

19. _____

20. Each of three students received a portion of the prize money for a contest. Ann received 160% of the amount Jeff received, and Jeff received $\frac{1}{4}$ of what Marcia received. Marcia received $820. What was the total number of dollars of prize money?

20. _____

21. Brandon has an 8-inch square pan. Barbara has a 9-inch square pan. Both pans have the same volume. What is the ratio of the height of Barbara's pan to the height of Brandon's pan? Express your answer as a common fraction.

21. _____

22. The four squares pictured share a common vertex. The three interior squares each have a vertex at the center of the next larger square. The largest square has side length 8 cm. How many square centimeters are in the shaded region?

22. _____

23. Keystone Bike Shop advertised a sale for 40% off any bike. The sale prices were then discounted an additional 20%. After both discounts, Jerry paid $168 for his new bike. What was the number of dollars in the original price of Jerry's bike?

23. _____

24. What is the sum of all positive integer values of n for which $\frac{n+8}{n}$ is an integer?

24. _____

25. If $a\nabla b = a^2 + 2ab + b^2$, what is the value of $(3\nabla 2)\nabla 5$?

25. _____

26. In the addition problem shown, a, b and c represent three different digits. What is the three-digit sum?

$$\begin{array}{r} abc \\ + \ acb \\ \hline cba \end{array}$$

26. _____

27. In a sequence, each term after the first is four more than three times the previous term. The fifth term is 403. What is the first term?

27. _____

28. All angles are right angles. How many rectangles are in this diagram?

28. _____
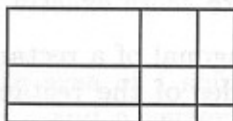
29. The numbers -2, 3 and 4 are each used once and substituted at random for a, b, and c in the equation $ax + b = c$. What is the probability that x is negative? Express your answer as a common fraction.

29. _____

30. Patrick drove to work on Monday at an average speed of 40 mph and arrived one minute late. He left at the same time on Tuesday, drove an average speed of 45 mph, and arrived one minute early. How many miles does he drive to work each day?

30. _____