# Warm-Up 6

1. _____ Twenty-five congruent circles are cut from a 10-inch by 10-inch sheet of paper. What is the greatest possible number of square inches in the combined area of the twenty-five circles? Express your answer in terms of pi.

2. _____ What two-digit integer is six times the sum of its digits?

3. _____ What is the sum of the digits in the 99-digit integer formed by listing the numbers 100 through 132 in order?

<div align="center">100,101,102,103, …129,130,131,132</div>

4. _____:_____ A stoplight is timed to stay green for 40 seconds. It turns yellow for 3 seconds and then remains red for 47 seconds. The cycle repeats all day every day. How long will the stoplight be green in a typical 24-hour day? Express your answer in hours and minutes, separated by a colon.

5. _____ In a classroom of 28 students: 19 of the students have brown eyes and 13 of the students wear glasses. If there are 7 students who do not have brown eyes or glasses, how many brown-eyed students wear glasses?

6. _____ Exactly one of the statements in this problem is true. The first statement in this problem is false. In fact, both the first and second statements in this problem are false. How many true statements are there in this problem?

7. _____ How many ways are there to arrange the four letters in the word MATH in which the A does not immediately follow the T?

8. _floor_____ Each flight of stairs in Parker's apartment building has the same number of stairs and each flight of stairs connects one floor to the next. Parker walks up 65 stairs to get from the Ground floor to his apartment. To get from the Ground floor to the top floor he must walk up 104 stairs. If the lowest floor of the building is called the Ground floor and the floor above it is called the second floor (or floor 2), what is the number assigned to the floor where Parker lives?

9. _____in The number of square inches in the area of a circle is equal to the number of inches in its diameter. What is the number of inches in the circle's circumference?

10. _____ How many digits are in the decimal representation of $2^{30} \cdot 5^{20}$?