Warm-Up 3

1. _____ If last month was July, then what month will it be 22 months from now?
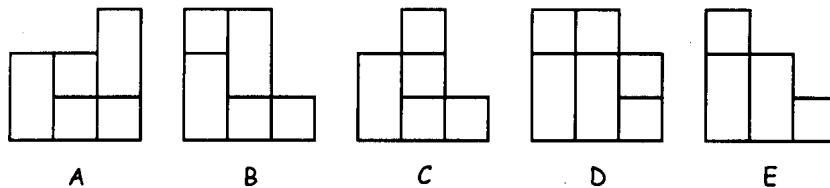
2. _____ The maximum slope for handicap ramps was changed from $\frac{1}{10}$ to $\frac{1}{12}$. What is the positive difference of these slopes? Express your answer as a common fraction.

3. _____ How many natural-number factors does N have if $N = 2^3 \cdot 3^2 \cdot 5^1$?
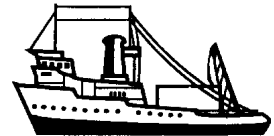
4. _____ A building modeled after the Chicago Sears Tower consists of nine square towers arranged in a three by three grid. They have congruent bases, and the heights, in feet, are indicated in the grid to the right. Which of the following is a side view of the building from some direction?

100	200	100
300	300	200
200	200	100

A   B   C   D   E

5. _____ Let $f(x) = 2x - 3$ and $g(x) = x + 1$. What is the value of $f(1 + g(2))$?

6. _____ An oil tanker containing 108,000 gallons of oil releases one third of its remaining volume every two hours. How many gallons have been released after the first six hours?

7. _____ What is the largest perfect square less than 225 that is a multiple of 9?

8. _____ Merina's annual salary is a whole number of dollars between $42,400 and $42,500. The digits in the hundreds, tens and units places are in strictly ascending order. How many distinct possibilities exist for her annual salary?

9. _____ The area of a circular plate is 200π cm². What is the number of centimeters in the radius of the plate? Express your answer in simplest radical form.

10. _____ Three standard dice are tossed. What is the probability that the sum of the numbers on the tops of the three dice is 17 or greater? Express your answer as a common fraction.