

1. How many two-digit integers are there where the tens digit is greater than the units digit? 1. _____

2. The surface of a $10 \times 10 \times 10$ cube is painted purple. It is then cut into 1000 small cubes of equal size. How many of these small cubes will have an odd number of faces painted purple? 2. _____

3. A map is to be colored using exactly four colors. If seven different colors are available, in how many ways can the four colors be chosen? 3. _____

4. Find the average of the elements of the set:
 $\{ 0, 7x, 5x+2, 7-2x, 6 \}$ 4. _____

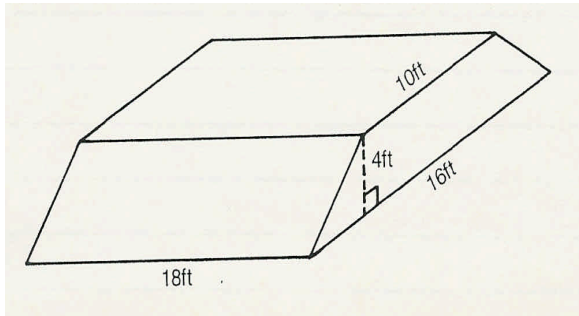
5. Among the integers 1 to 300, how many are divisible by 3 or 5? 5. _____

6. If, after two successive price reductions of 15% and 10%, an item is marked at \$30.60, what was its original price in dollars? 6. _____

7. In the coordinate plane a certain triangle has vertices whose coordinates are (0,0), (12,0), and (12,5). Find the number of units in the perimeter of this triangle. 7. _____ units

8. An equilateral triangle and a square have sides of equal length. The sum of the perimeters of the triangle and the square equals the perimeter of a rectangle. If one side of the triangle is 4 units and the area of the rectangle is 48 square units, what are the dimensions, in units, of the rectangle? 8. _____ units

9. Find the number of square feet in the total surface area of the trapezoidal prism shown, if the trapezoidal faces are isosceles trapezoids.



9. _____ sq. ft.

10. What is the smallest positive integer that when multiplied by 27,027 has only 9's in its product? 10. _____

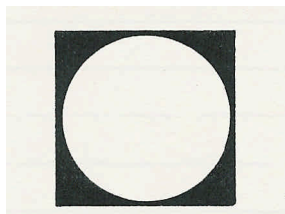
11. What is the sum of the first 80 positive odd integers subtracted from the sum of the first 80 positive even integers? 11. _____

12. Eight percent of what number is eight less than eighty percent of eight hundred? 12. _____

13. A two-digit number is a perfect square and has exactly nine positive integral factors. What is the number? 13. _____

14. What is the largest common factor of 442 and 247? 14. _____

15. A circle is inscribed in a square as shown.



15. _____ sq. cm.

If the radius of the circle is 1 cm, find the number of square centimeters in the shaded region. Give your answer to the nearest tenth of a square centimeter.