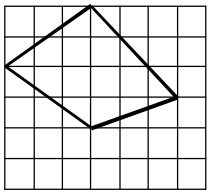
1. What is the area, in square centimeters, of the figure shown?



□ = 1 sq. cm.

1. _____sq.cm

2. A hummingbird flaps its wings 1500 times per minute while airborne. While migrating south in the winter, how many times during a 1.5 hour flight does the hummingbird flap its wings? Express your answer in scientific notation.

2. _____

3. What is the sum of the first 20 positive odd integers?

3. _____

4. A five-digit number is called a *mountain number* if the first three digits increase and the last three digits decrease. For example, 35,763 is a mountain number but 35,663 is not. How many five-digit numbers greater than 70,000 are mountain numbers?

4. _____

5. Patrick is able to determine Sam's secret whole number, using the answer to the questions below:

- Is it a factor of 30? Yes
- Is it a prime number? No
- Is it a multiple of 3? No
- Is it less than 3? No

What is Sam's secret number?

5. _____

6. The numbers 1 through 25 are written on 25 cards with one number on each card. Sara picks one of the 25 cards at random. What is the probability that the number on her card will be a multiple of 2 or 5? Express your answer as a common fraction.

6. _____

7. The earned run average (ERA) of a major league baseball pitcher is determined by dividing the number of earned runs the pitcher is allowed by the number of innings pitched, then multiplying the result by 9. What is Ray Mercedes' ERA, to the nearest hundredth, if he has pitched 164 innings and allowed 48 earned runs?

7. _____

8. I am four times as old as my daughter. In 20 years time I shall be twice as old as my daughter. How old are we today?

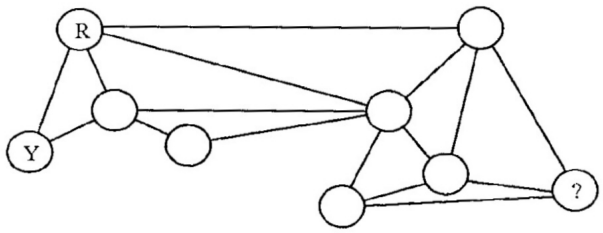
I am _____

8. daughter is_____

9. A picture frame that usually sells for $50 is on sale for 5 percent off. If a 5 percent sales tax were added to the sale price, what amount would you pay? 9. _____

10. A local pet shop sold only Cats and Canaries. In total, there were 72 Cats and Canaries on display, all in perfect condition. If these had a total of 200 legs, how many were Canaries? 10. _____

11. Each circle at a vertex in the diagram below is colored red (R), yellow (Y) or blue (B). No two vertices of a drawn triangle have the same color. What is the color of the vertex marked by the question mark? 11. _____



12. What are the chances of flipping a penny four times and getting at least two tails?

12. _____

13. An algebraic expression of the form $a + bx$ has the value of 15 when $x = 2$ and the value of 3 when $x = 5$. Calculate $a + b$. 13. _____

14. A piggy bank has $1.05 in coin change. Figure out which coins are in the bank, if you know that the bank:

- cannot make change for a nickel
- cannot make change for a dime
- cannot make change for a quarter
- cannot make change for a half dollar
- cannot make change for a dollar

and none of the coins is a dollar.

14. _____

15. Two different natural numbers are selected from the set {1, 2, 3,…. 6}. What is the probability that the greatest common factor of these two numbers is one? Express your answer as a common fraction.

15. _____