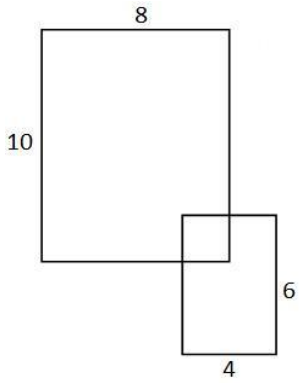
Virtual Math Club

Problem Set #50 – June 26, 2011 NO CALCULATOR Name_____

1. A rectangle has adjacent sides of 10 units and 8 units. A second rectangle with adjacent sides of 6 units and 4 units overlaps the first rectangle as shown below. What is the difference between the two non-overlapping regions of the two rectangles?



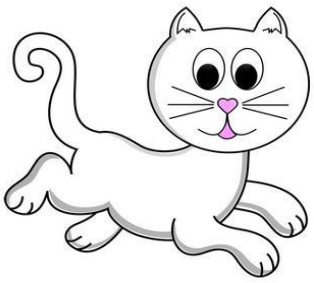
,Answer:

2. If you take the digit-sum of a number, that is, you add the digits in the number, how many three-digit numbers will have a digit-sum of 10? (For example, 163 is one, since 1 + 6 + 3 = 10; 901 is another, since 9 + 0 + 1 = 10.)

Answer:

3. A cat chases a mouse, which has a 40 meter head start. For every 7 meters the mouse runs, the cat runs 9 meters. How far must the cat run to catch the mouse?

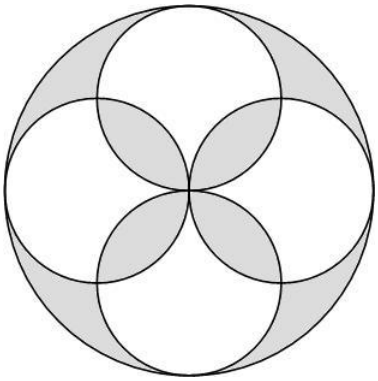
Answer:



4. Bill E. Goat came to a toll bridge that had a sign stating that the toll-taker would double the customer's money each time he crossed the bridge, but then the customer would have to pay a fee of $1.20 per crossing. Bill decided to cross the bridge three times and see how the system worked. Sure enough, each time Bill crossed the bridge, the toll taker doubled his money, and then took $1.20 in toll charges. After the third crossing, Bill was surprised when he paid the $1.20 fee and found himself with no money. How much money did Bill start with?

Answer:

5. Nadia wants to plant a large circular flower garden in her back yard. She drew the diagram below with her compass. The shaded areas will be planted in purple petunias, and the white areas will be planted in white petunias. If the diameter of the big circle is 8 feet, find the total area of the part planted in purple petunias? (Express your answer in terms of π, and then use a calculator to get a numerical value.)



Answer: