## Part A

1. The pen-and-paper method of addition works for this problem. Since $3 + 4 = 7$, $2 + 4 = 6$, and $1 + 4 = 5$, the answer is $123 + 444 = \boxed{567}$.

2. This is a multiplication problem. Each of 2 cakes is cut into 3 large slices, so there are $2 \times 3 = 6$ large slices. Then each of 6 large slices is cut into 4 smaller slices, so Katie has $6 \times 4 = \boxed{24}$ slices in the end.

3. The area of a square sheet of paper with side length 3 cm is $(3 \text{ cm})^2 = 3 \text{ cm} \times 3 \text{ cm} = 9 \text{ cm}^2$. The area of the removed 2 cm $\times$ 1 cm portion is 2 cm$^2$. So the area that remains is $9 \text{ cm}^2 - 2 \text{ cm}^2 = \boxed{7} \text{ cm}^2$.

4. Currently, the cookie with more chips has $9 - 3 = 6$ more chocolate chips than the cookie with fewer chips. Every time the Cookie Monster moves a chocolate chip, this difference shrinks by two; the larger cookie loses a chocolate chip and the smaller cookie gains a chocolate chip. Since $6 \div 2 = 3$, he will have to move $\boxed{3}$ chocolate chips to make the difference zero so that the two cookies have the same number of chocolate chips.

5. Since $\$12 \div 2$ is \$6, Pablo spends \$6 on a box of candies, leaving him with $\$12 - \$6 = \$6$. Since $\$6 \div 3 = \$2$, Pablo spends \$2 on the chocolate bar, leaving him with $\$6 - \$2 = \$\boxed{4}$.

6. Each person shakes three other people's hands, so $4 \times 3 = 12$ handshakes happen. But this counts each handshake twice, because two people are involved in each handshake. Therefore the actual number of handshakes is $12 \div 2 = \boxed{6}$.

7. If all 12 coins were nickels, then she would have $12 \times 5 = 60$ cents. The difference between 1 dollar and 60 cents is 40 cents. Since the difference between a quarter and a nickel is 20 cents, we can replace two nickels with two quarters to increase the total amount by $20 \times 2 = 40$ cents. Thus, we would end up with 2 quarters and $\boxed{10}$ nickels. Trial and error also works.

8. When Bob first stacks books until his pile has twice as many books as Alice's, Bob stacks his pile until there are $9 \times 2 = 18$ books. When Alice returns from lunch and stacks the books until the two piles are the same size (18 books each), the total number of books is $2 \times 18 = \boxed{36}$.