Part C

1. We can use a system of equations to solve this problem. Let x be the number of 4-cent stamps and let y be the number of 8-cent stamps. Then:

$$100 = 4x + 8y$$
$$18 = x + y$$

   The solution to this system is $x = 11$ and $y = 7$.

   Alternatively, we can solve this problem without algebra, by considering that if she had bought only 4-cent stamps, it would cost $4 \times 18 = 72$ cents. This is short $100 - 72 = 28$ cents from the target, so we need $28 \div 4 = 7$ cents.

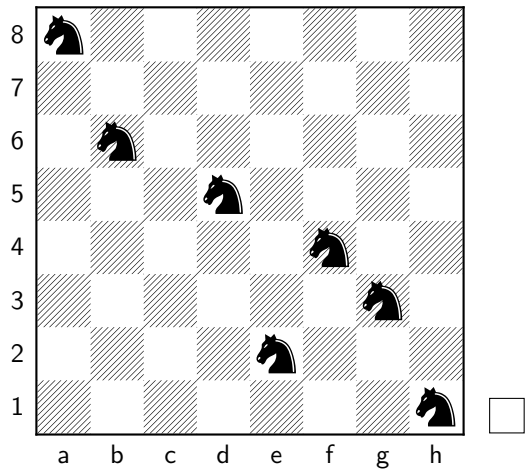
2. We compute $1 \times 1.4 = 1.4$, then $1.4 \times 0.8 = 1.12$, then $1.12 \times 0.8 = 0.896$. Rounding to the nearest cent, we arrive at the answer, 90 cents.

3. Two stars is $2 \times 3 = 6$ squares which is $6 \div 2 \times 10 = 30$ circles.

4. After Aidan pours out 2 litres, only 3 litres of water remain, and also $\frac{2}{5}$ of the milk powder is gone. But $\frac{2}{5} = 0.4$ and $4 \times 0.4 = 1.6$, so that's the amount of milk powder that must be restored.

5. The first person can have 1, 2, 3, or 4 slices. If the first person gets one, then there are 4 ways to share the remaining 5. If the first person gets two, then there are 3 ways to share the remaining 4. If the first person gets three, then there are 2 ways to share the remaining 3. If the first person gets four, then there's only one way to share the remaining two pies. So there's a total of $4 + 3 + 2 + 1 = 10$ ways to share the pies.

6. An example of a way to do it in six moves is shown. There are many equivalent solutions, but there's no better solution.



7. We can solve this with a system of equations. Let a be Annie's current age and let b be Beth's current age. Then:

$$a = 3b$$
$$(a + 4) = 2(b + 4)$$

The solution to this system is that $a = 12$ and $b = 4$, so Annie is currently 12 years old.

An alternative solution relies on the observation that the difference in their ages must always be constant. That difference, in four years, will be equal to Beth's age. But right now, it's twice as much as Beth's age. So in four years, Beth will be twice her age. So currently, Beth is four, and therefore Annie is currently twelve.

8. We can solve this with a system of equations:

$$b = 3g$$
$$b - 23 = g + 33$$

The solution to this system is $b = 84$ and $g = 28$, so there were 84 boys initially.

An alternative solution can be reached by noticing that removing 23 boys and adding 33 girls was enough to equalize the number, so the initial difference was $23 + 33 = 56$ more boys than girls. But then that means that there were $56 \div 2 = 28$ girls, and so therefore 84 boys.