Solutions:

1) Let $abcd$ be the number that Wendy saw.
From the third clue we know that the number in the $b$ digit is a 3.
From the second clue we know that the number in the $d$ digit is 6 times larger than the number in the $c$ digit. Thus, $d = 6c$
From the fourth clue, we know that the number in the $a$ digit is $\frac{1}{3}$ the value of the number in the $d$ digit. Thus, $a = \frac{1}{3}d$. But since we know that $d = 6c$, we can see that $a = \left(\frac{1}{3}\right) \times 6c = \frac{6}{3}c = 2c$
The first clue tells us that one of the digits is a 1. Since we know that $a = 2c$ and $d = 6c$, neither of those digits can be 1, so $c$ must equal 1.
Therefore, the number that Wendy saw was 2316.

2) The minimum number of trips is 9.
Note: the solution below is only one solution, there are other possibilities.
Trip 1: Ginny and Hermione travel from Hogwarts to the Weasley’s house.
Trip 2: Hermione travels back from the Weasley’s house to Hogwarts.
Trip 3: Harry travels from Hogwarts to the Weasley’s house.
Trip 4: Ginny travels from the Weasley’s house to Hogwarts.
Trip 5: Ginny and Hermione travel from Hogwarts of the Weasley’s house.
Trip 6: Hermione travels from the Weasley’s house to Hogwarts.
Trip 7: Ron travels from Hogwarts to the Weasley’s house.
Trip 8: Ginny travels from the Weasley’s house to Hogwarts.
Trip 9: Ginny and Hermione travel from Hogwarts of the Weasley’s house.

3) If Scott is telling the truth, then James like cookies and must be telling the truth since the one who likes cookies always tells the truth. So Harris must like cake and Scott likes pie.
4) Step 1: Fill the 4 cup measuring cup and pour into the 7 cup measuring cup.
Step 2: Fill the 4 cup measuring cup and pour into the 7 cup measuring cup (filling
the 7 cup measuring cup leaving 1 cup in the 4 cup measuring cup).
Step 3: Empty the 7 cup measuring cup.
Step 4: Pour the 1 cup of water from the 4 cup measuring cup to the 7 cup measur-
ing cup.
Step 5: Fill the 4 cup measuring cup and pour into the 7 cup measuring cup. There
is now 5 cups of water in the 7 cup measuring cup.

5) One solution is:

6) Natalia went to Australia for 4 weeks and her favourite activity was surfing.
Gavin went to France for 2 weeks and his favourite activity was reading.
Rachael went to Spain for 3 weeks and her favourite activity was walking.
Geoff went to Cuba for 1 week and his favourite activity was sailing.
Example:

Check solutions online at www.sudoku-puzzles.net (type in puzzle ID 136526672).

Exercises:

1)

\[
\begin{array}{cccc}
1 & 4 & 14 & 15 \\
13 & 16 & 2 & 3 \\
12 & 9 & 7 & 6 \\
8 & 5 & 11 & 10 \\
\end{array}
\]

2)

\[
\begin{array}{cccc}
17 & 24 & 1 & 8 & 15 \\
23 & 5 & 7 & 14 & 16 \\
4 & 6 & 13 & 20 & 22 \\
10 & 12 & 19 & 21 & 3 \\
11 & 18 & 25 & 2 & 9 \\
\end{array}
\]
3) The magic number is 27

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8 13 6
7 9 11
12 5 10
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4) The magic number is 42

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13 18 11
12 14 16
17 10 15
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5) Solve each of the following Sudoku puzzles:

Hard Puzzle:
Check solutions online at www.sudoku-puzzles.net (type in puzzle ID 131280151).

Very Hard Puzzle:
Check solutions online at www.sudoku-puzzles.net (type in puzzle ID 132006347).

6) Check solutions online at www.sudoku-puzzles.net (type in puzzle ID 162569122).