2012 Nov Paper 1 – Foundation WJEC

**14.** A community hall has a large number of rectangular tables and a large number of chairs.

The tables can seat up to 3 people along each of the longer sides and 1 person at each end.

A street party is being organised using the community hall’s tables and chairs.

Tables are joined and placed in a long straight line. Tables meet edge to edge to form the line.

*(a)* What is the least number of tables needed to seat 164 people? [4 mark]

*(b)* There are *n* people sitting around a straight line of tables. There are no empty seats. Write an expression in terms of *n* for the least number of tables needed to seat these people. [3 marks]

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| **2012 Nov Paper 1**  **Foundation WJEC**  **Question 14**  **4 marks** | Tables meet edge to edge to form the line. | What is the least number of tables needed to seat 164 people? |
| A community hall has a large number of rectangular tables and a large number of chairs. | The tables can seat up to 3 people along each of the longer sides and 1 person at each end. | A street party is being organised using the community hall’s tables and chairs. |
| Tables are joined and placed in a long straight line. | **Hint 1**  To help you to visualise the layout, draw one table and show where people can sit.  Count the people. | **Hint 2**  Draw two joined tables and show where the people can sit.  Count the people. |
| **Hint 3**  Draw three joined tables and show where the people can sit.  Count the people. | **Hint 4**  You should have noticed that you have built a number pattern  1 table = 8 people  2 tables = 14 people  3 tables = 20 people  Goes up in 6’s | **Hint 5 – the long way round**  Carry on adding 6’s until you get up to or beyond 164 people |
| **Hint 5 – the short way round and ans to (b)**  Try to find the nth term of the number pattern 8, 14, 20…  6n+2 | **Hint 6**  6n+2 = 164  Solve this equation | **Answer**  6n+2 = 164  6n = 162  n = 27  27 tables needed |