1. Let x = number. Then $x = -x - 1$, so $x = -\dfrac{1}{2}$

2. $4.2 - 3.5 < x < 4.2 + 3.5 \rightarrow 0.7 < x < 7.7$. Integer values go from **1 to 7**.

3. Method 1: all points are in A, and B or C, so $A \cap (B \cup C)$
   Method 2: points in A and B or in A and C, so $(A \cap B) \cup (A \cap C)$

4. Originally, arrangement is x by x, then changed to 4 by x+3. That means $x^2 = 4(x+3)$, $x = -2 \ or \ 6$, but x > 0 which makes x = 6 and the number of chairs is **36**.

5. Method 1: set $x^2 = 6x + 7. \rightarrow (x - 7)(x + 1) = 0 \rightarrow x = 7 \ or \ -1$. Now check values for $x < -1 \ or \ -1 < x < 7 \ or \ x > 7$. The ones that work are $x < -1 \ or \ x > 7$
   Method 2: graph the parabola $y = x^2 - 6x - 7$ and see when it is > 0. The x-intercepts are $-1, \ 7$. Since the graph opens upwards, it is > 0 when $x < -1 \ or \ x > 7$.

6 Think of the figure on a coordinate system, with F at (0,0), A at (0,5), C at (7,3) and E at (11,0).
   The lines $\overline{CF}$ and $\overleftrightarrow{AE}$ have equations $y = \dfrac{3}{7}x$ and $y = \dfrac{-5}{11}x + 5$. Solving the system,

   $y = \dfrac{165}{68}$. y is the height of the triangle. Therefore the area $= \dfrac{1}{2} \cdot 11 \cdot \dfrac{165}{68} \approx 13.3$