The number of bacteria in a refrigerated food is given by $N\left(t\right)=20t^{2}-20t+120$, for -2 ≤ t ≤ 14 and where t is the temperature of the food in Celsius. At what temperature will the number of bacteria be minimal?

Hint 1: Use the vertex formula:

$$x=\frac{-b}{2a}$$

$$x=\frac{-(-20)}{2(20)}$$

$$x=\frac{1}{2}$$

Hint 2: Use whatever you got from the vertex formula and plug in to the original equation.

$$N\left(t\right)=20\left(\frac{1}{2}\right)^{2}-20\left(\frac{1}{2}\right)+120$$

Solution: 115 bacteria remain.