

Baccalauréat 2009 - Académie de Lille

Epreuve de Discipline Non Linguistique Mathématiques/Anglais

Thème F : dérivée et optimisation Sujet 3

L'usage de la calculatrice est autorisé.

Temps de préparation: 20 minutes.

Cette planche sera à rendre à l'examineur, veillez à ne rien écrire dessus.

There are 50 apple trees in an orchard. Each tree produces 800 apples. For each additional tree planted in this orchard, the number of apples per tree drops by 10 apples.

1) Fill in the following table

| Number of additional trees | Number of trees | Number of apples per tree | Total number of apples |
|----------------------------|-----------------|---------------------------|------------------------|
| 0 | 50 | 800 | 40000 |
| 1 | 51 | 790 | |
| 2 | 52 | | |
| 3 | 53 | | |
| 4 | 54 | | |

2) Let x be the number of additional trees, express the total number of apples in terms of x .

3) How many trees should be added to the existing orchard in order to maximise the total number of apples?