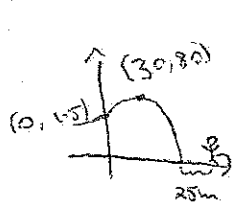


3.8 Équations quadratiques

Corrigé : Feuille de travail 2

1.



$$y = a(x-p)^2 + q$$

$$65 = a(0-30)^2 + 80$$

$$-15 = 900a$$

$$-\frac{1}{60} = a$$

$$30 \pm 69,3 = x$$

$$x = \cancel{39,3} \text{ ou } x = 99,3$$

$$99,3 + 25$$

$$124,3 \text{ m}$$

$$y = -\frac{1}{60}(x-30)^2 + 80$$

$$0 = -\frac{1}{60}(x-30)^2 + 80$$

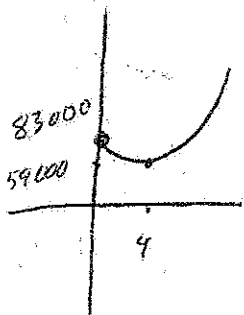
$$-80 = -\frac{1}{60}(x-30)^2$$

$$\sqrt{4800} = \sqrt{(x-30)^2}$$

$$\pm 69,3 = x-30$$

Les spectateurs doivent être à 124,3m.

2. Soient x : le nombre d'années après aujourd'hui
 y : le nombre d'apprentis.



$$y = a(x-p)^2 + q$$

$$143000 = a(0-4)^2 + 159000$$

$$24000 = 16a$$

$$1500 = a$$

$$y = 1500(x-4)^2 + 159000$$

$$375000 = 1500(x-4)^2 + 159000$$

$$\frac{375000 - 159000}{1500} = \frac{1500(x-4)^2}{1500}$$

$$\pm \sqrt{144} = \sqrt{(x-4)^2}$$

$$\pm 12 = x-4$$

Le programme de subventions
 durera 16 ans.

$$12 = x-4$$

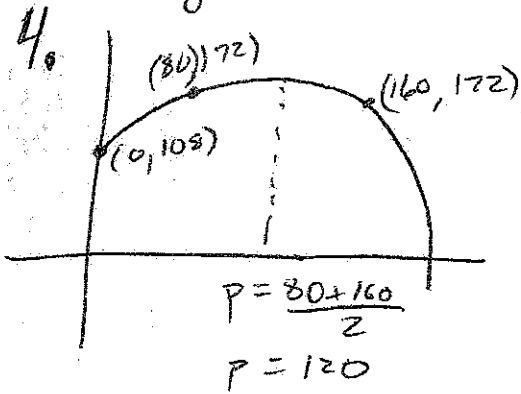
$$-12 = x-4$$

$$16 = x$$

$$\cancel{-9 = x}$$

x : Qté d'azote (en Kg)

y : Nombre de boisseaux



$$y = a(x-p)^2 + q$$

$$108 = a(0-120)^2 + q \quad 172 = a(160-120)^2 + q$$
$$108 = 14400a + q \quad (172 = 1600a + q) + (-1)$$
$$-172 = -1600a - q$$
$$\frac{-64}{-12800} = a \quad 172 = 1600(-\frac{1}{200}) + q$$
$$-\frac{1}{200} = a \quad 180 = q$$

$$y = -\frac{1}{200}(x-120)^2 + 180$$

$$140 = -\frac{1}{200}(x-120)^2 + 180$$

$$-40 = -\frac{1}{200}(x-120)^2$$

$$8000 = (x-120)^2$$

$$\pm 89,44 = x-120$$

$$89,44 = x-120$$

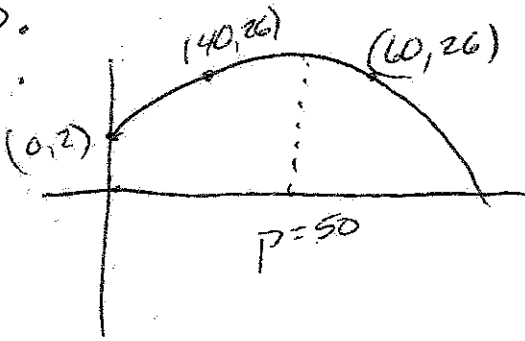
$$209,44 = x$$

$$-89,44 = x-120$$

$$30,56 = x$$

La quantité minimale d'azote sera de 30,56 Kg.

3.



$$y = a(x-50)^2 + q$$

$$2 = a(0-50)^2 + q \quad 26 = a(40-50)^2 + q$$

$$2 = 2500a + q \quad (26 = 100a + q) \times -1$$

$$\begin{array}{r} -26 = -100a - q \\ \hline -24 = 2400a \\ a = -\frac{1}{100} \end{array}$$

$$26 = 100(-\frac{1}{100}) + q$$

$$27 = q$$

$$y = -\frac{1}{100}(x-50)^2 + 27$$

$$0 = -\frac{1}{100}(x-50)^2 + 27$$

$$-27 = \frac{-1}{100}(x-50)^2 \quad x-100$$

$$\pm \sqrt{2700} = \sqrt{(x-50)^2}$$

$$\pm 51,96 = (x-50)^2$$

$$51,96 = x - 50 \quad -51,96 = x - 50$$

$$101,96 = x$$

$$\cancel{-1,96 = x}$$

$$101,96 + 10 = 111,96$$

$$111,96_m < 112,5_m$$

NON

Serge ne réussira pas son coup.