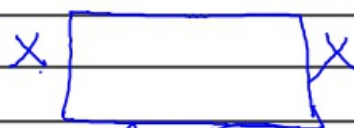


Essential Question:

What are the two most common quadratic application problems?

Questions:
Notes:

[Ex] A farmer wishes to enclose a rectangular garden with 100m of fencing.
 a) If the garden is x m wide, find the length in terms of x .



$$P = 2l + 2w$$

$$100 = 2l + 2x$$

$$100 - 2x = 2l$$

$$100 - 2x = l$$

∴ Know want
 $w = x$ $l =$
 $P = 100m$

$$50 - x = l$$

b. Find the width of a garden with Area of $525m^2$

$$A = lw$$

$$A = (50-x)x$$

$$A = x(50-x)$$

$$525 = x(50-x)$$

$$x^2 - 50x + 525 = 0$$

$$(x-15)(x-35) = 0$$

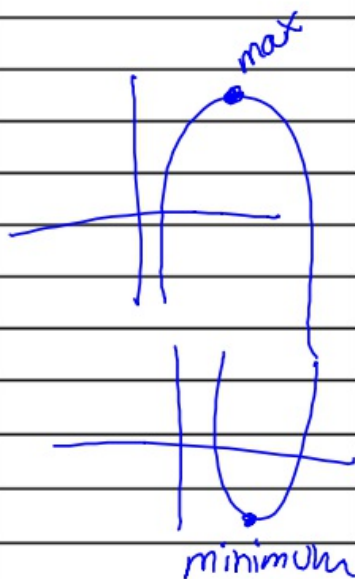
$$x = 15 \text{ or } x = 35$$

c) Find the maximum area the garden can have.

$$x = 25$$

$$l = 50 - 25 = 25$$

$$A = 25^2 =$$

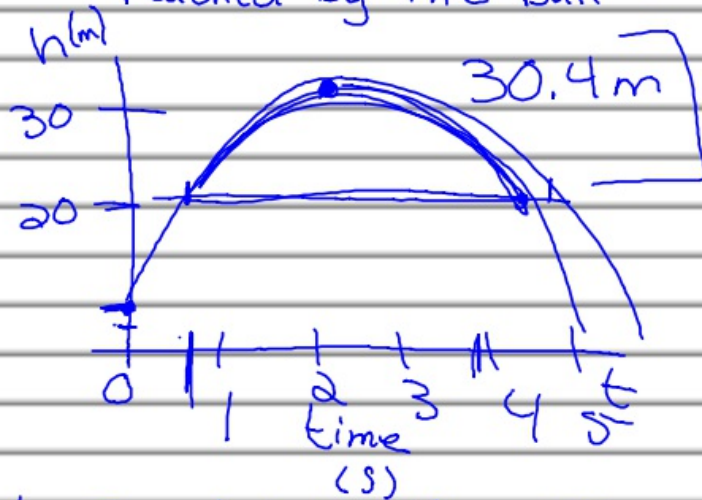


Questions:

Notes:

Ex) The height of a ball in t seconds after thrown is modelled by $h = 24t - 4.9t^2 + 1$ where h is the height of the ball in meters.

a. Find the maximum height reached by the ball



b. For what length of time will the ball be higher than 20 m?

$h = 20$; plug 20 in for h and solve:

$$20 = 24t - 4.9t^2 + 1$$

$$4.9t^2 - 24t + 19 = 0$$

$$t = \frac{24 \pm \sqrt{(-24)^2 - 4(4.9)(19)}}{2(4.9)}$$

$$t = .993s \text{ and } 3.90s$$

Look at
Example 19
p. 54
Hwp. 55 a, k
#1-10

+=