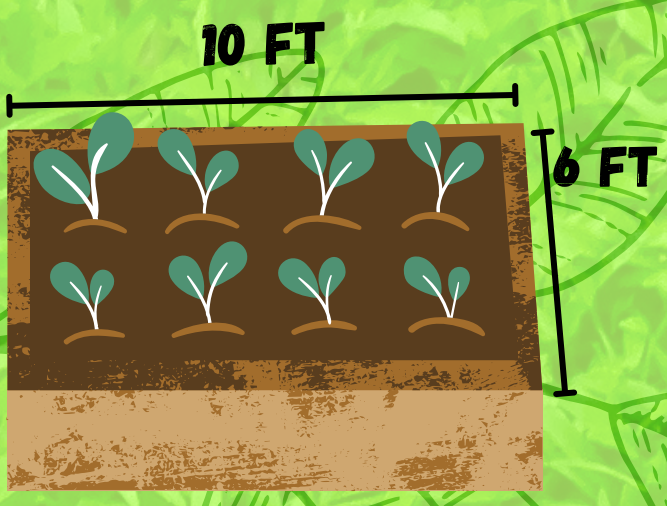
GARDEN EXPANSION



You have a rectangular garden in your backyard, and you decide to expand it. The dimensions of the original garden are 10 feet in length and 6 feet in width. You plan to increase the length of the garden by a fixed amount each year while keeping the width the same.

EQUATIONS

LENGTH INCREASED BY 2FT EVERY YEAR

$$L(t) = 2t + 10$$

ÁREA IF LENGTH AND WIDTH INCREASED BY 2FT EVERY YEAR

$$A(t) = 4t^2 + 32t + 60$$

PROBLEM

Calculate the **length** and **area** of the garden after 3 years and after 5 years

3 YEARS

EQUATIONS FOR LENGTH

$L(t) = 2t + 10$
$L(3) = 2(3) + 10$
$L(t) = 6 + 10$
$L(t) = 16ft$

EQUATIONS FOR AREA

$A(3) = 4(3)^2 + 32(3) + 60$
$A(3) = 36 + 96 + 60 = 192\ ft^2$

5 YEARS

EQUATIONS FOR LENGTH

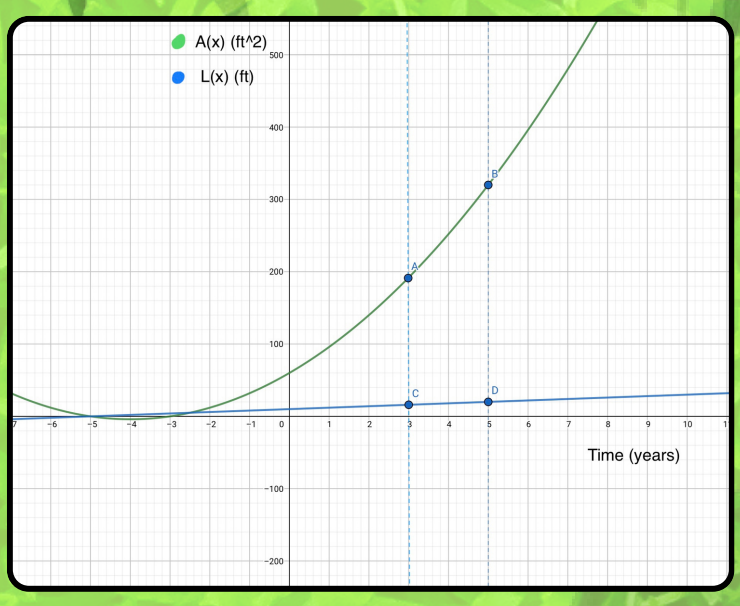
$L(5) = 2t + 10$
$L(5) = 2(5) + 10$
$L(5) = 10 + 10$
$L(t) = 20ft$

EQUATIONS FOR AREA

$A(5) = 4(5)^2 + 32(5) + 60$
$A(5) = 100 + 160 + 60 = 320\ ft^2$

$L(t) = 2t + 10$
$A(t) = 4t^2 + 32t + 60$

AREA/LENGTH OF THE GARDEN VS TIME



WHAT IF WE COULD ALTER THE RATE OF CHANGE FOR THE LENGTH?

$$L(t) = xt + 10$$

- x: rate of increase (ft/year)
- t: time (years)
- 10: original length (ft)

WHAT IF THE RATE OF CHANGE WAS 3 FT/YEAR?

$L(4) = 10 + (3ft)(4years)$

$= 10 + 12 = 22\ ft$

$L(t) * w(t) = (3t + 10)(3t + 6)$
$A(x) = 9t^2 + 18xt + 20xt + 60$
$A(t) = 9t^2 + 38t + 60$

$A(4) = 9(4)^2 + 38\ (4) + 60$

$A(4) = 144 + 152 + 60$

$A(4) = 356\ ft^2$

	Sept 18	Sept 20	Sept 22
Problem a,c,e and g	Urrea	Urrea	
Problem b,d, and f	Mejía	Mejía	
Video for Advance			Urrea
Video for Mastery			Mejía
Infographic (design)		Mejía	
Infographic content			Urrea

LUCAS:
RESPONSIBLE FOR DIFFERENTIATING AND SEARCHING FOR FOUNDATIONS

ANDRÉS:
ANALYST AND RESPONSIBLE FOR CHECKING UNDERSTANDING

"How do we create the equations?"

"What if would happen if we also use the width?"