

the Secret of Solving Optimization Problems in Calculus Minimizing and Maximizing.

Lesson 293 | Calculus AB | Optimization

<https://www.youtube.com/watch?v=ctpwvdOEEPo>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

A farmer has 176 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

02

A farmer has 196 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

03

A farmer has 48 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

the Secret of Solving Optimization Problems in Calculus Minimizing and Maximizing.

Lesson 293 | Calculus AB | Optimization

<https://www.youtube.com/watch?v=ctpwvdOEEPo>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

04

A farmer has 44 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

05

A farmer has 110 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

06

A farmer has 180 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

the Secret of Solving Optimization Problems in Calculus Minimizing and Maximizing.

Lesson 293 | Calculus AB | Optimization

<https://www.youtube.com/watch?v=ctpwvdOEPPo>

Original practice aligned to the saved video title.

01

A farmer has 176 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

Let widths be w and length $L=176-2w$. Area $A(w)=176w-2w^2$, $0<w<88$. $A'=176-4w=0$ gives $w=44$, $L=88$. $A''=-4<0$; maximum area 3872 m^2 .

02

A farmer has 196 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

Let widths be w and length $L=196-2w$. Area $A(w)=196w-2w^2$, $0<w<98$. $A'=196-4w=0$ gives $w=49$, $L=98$. $A''=-4<0$; maximum area 4802 m^2 .

03

A farmer has 48 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

Let widths be w and length $L=48-2w$. Area $A(w)=48w-2w^2$, $0<w<24$. $A'=48-4w=0$ gives $w=12$, $L=24$. $A''=-4<0$; maximum area 288 m^2 .

the Secret of Solving Optimization Problems in Calculus Minimizing and Maximizing.

Lesson 293 | Calculus AB | Optimization

<https://www.youtube.com/watch?v=ctpwvdOEEO>

Original practice aligned to the saved video title.

04

A farmer has 44 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

Let widths be w and length $L=44-2w$. Area $A(w)=44w-2w^2$, $0<w<22$. $A'=44-4w=0$ gives $w=11$, $L=22$. $A''=-4<0$; maximum area 242 m^2 .

05

A farmer has 110 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

Let widths be w and length $L=110-2w$. Area $A(w)=110w-2w^2$, $0<w<55$. $A'=110-4w=0$ gives $w=55/2$, $L=55$. $A''=-4<0$; maximum area $3025/2 \text{ m}^2$.

06

A farmer has 180 m of fencing for three sides of a rectangle beside a straight river. Maximize the area; state dimensions.

Let widths be w and length $L=180-2w$. Area $A(w)=180w-2w^2$, $0<w<90$. $A'=180-4w=0$ gives $w=45$, $L=90$. $A''=-4<0$; maximum area 4050 m^2 .