

Name:

Zoey. Jasmine Moody

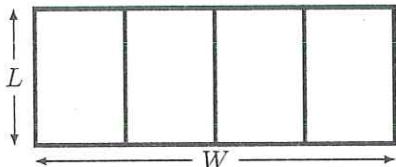
Perm Number

4504134

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

Lw: 1000 m

$$\frac{1000}{L} = w$$

$$P = 4L + 2w$$

$$P = 4L + 2 \left(\frac{1000}{L} \right)$$

$$P = 4L \cdot \frac{2000}{L^2} = P = 4L \cdot \frac{2000}{L^2}$$

$$P^1 = 4 + (-20004)^{-2}$$

$$\Theta : 4 - 2000 L^{-2}$$

$$\begin{array}{r} \cdot 4 \\ \cdot 4 \\ \hline -2 \end{array}$$

$$L^2 \cdot -4 \cdot \frac{-2000 E}{L^2} \cdot L^2$$

$$\frac{-4L^2}{-4} \therefore -2000$$

$$\sqrt{L^2} = \sqrt{500}$$

1

$$\frac{-5L^2}{-5} \quad \cdot \quad \frac{-2000}{-5}$$

$$\sqrt{L^2} = \sqrt{400}$$

L: 20 m

20 m

10

~~20m~~

Name: Alicia Caby

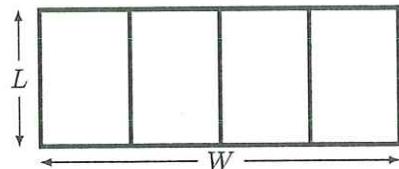
Perm Number:

666030 - 2

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 \text{ m}^2 = L \cdot W \quad P = 5L + 2W$$

$$L = \frac{1000}{W} \rightarrow P = 5\left(\frac{1000}{W}\right) + 2W$$

$$P = \frac{5000}{W} + 2W$$

$$1000 = \frac{1000}{W} \times W$$

$$1000 = 1000$$

$$P = 5000W^{-1} + 2W$$

$$P' = -5000W^{-2} + 2$$

$$0 = \frac{5000}{W^2} + 2$$

$$-2 = \frac{5000}{W^2}$$

$$\frac{-2W^2}{-2} = \frac{5000}{-2}$$

$$\sqrt{\frac{W^2}{-2}} = \sqrt{\frac{5000}{-2}}$$

$$W = 50$$

$$L = \frac{1000}{50} = 20$$

$$L =$$

$$20$$

Name:

Crystal Mendoza

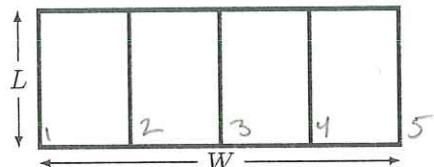
Perm Number:

4138483

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$\begin{aligned} A = LW &= 1000 \\ W &= \frac{1000}{L} \end{aligned}$$

$$\begin{aligned} 5L + 2W &= 5L + 2\left(\frac{1000}{L}\right) \\ &= 5L + \frac{2000}{L} \end{aligned}$$

$$\begin{aligned} \frac{d}{dx} &= 5L + \frac{2000}{L} \\ \frac{d}{dx} &= 5 - \frac{2000}{L^2} = 0 \end{aligned}$$

$$5 - \frac{2000}{L^2} = 0$$

$$L^2 \cdot 5 = \frac{2000}{L^2} \cdot L^2$$

$$\frac{5L^2}{5} = \frac{2000}{5}$$

$$\sqrt{L^2} = \sqrt{400}$$

$$L = 20$$

$$L =$$

$$20 \text{ m}^2$$

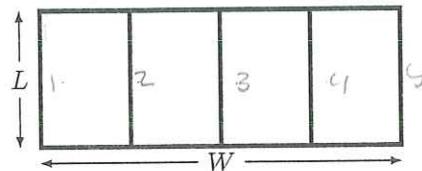
Name:

Perm Number:

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m². Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = L \cdot w \quad P = 5L + 2w$$

$$1000 = L \cdot w$$

$$P = 5L + 2(1000)$$

$$\begin{aligned} 1000 &= L \cdot w \\ 1000 &= L \cdot \frac{1000}{L} \\ 1000 &= \frac{1000}{L} \cdot L \\ 1000 &= \frac{1000}{L} \cdot L \\ 1000 &= 1000 \end{aligned}$$

$$P = 5L + \frac{2000}{L}$$

$$\begin{aligned} P &= 5(20) + 2\left(\frac{1000}{20}\right) \\ &= 100 + 100 \\ &= 200 \end{aligned}$$

$$5L + 2000 \cdot L^{-1}$$

$$5 - 2000 \cdot L^{-2} = 0$$

$$5L^2 = 2000$$

$$L^2 = 400$$

$$L = 20$$

$$\begin{array}{r} 400 \\ \times 20 \\ \hline 8000 \end{array}$$

$$\begin{array}{r} 400 \\ \times 20 \\ \hline 4000 \end{array}$$

$$L = \boxed{20}$$

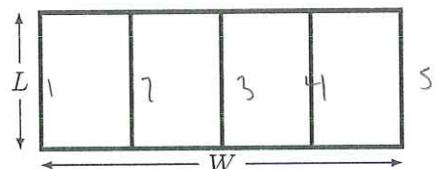
Name: Mihani Leyva-Benitez

Perm Number:

3954120TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



$$5L + 2W = \text{Total Fencing}$$

parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$5L + 2000L^{-1}$$

$$5 - 2000L^{-2} = 0$$

$$5L^2 = 2000$$

$$L^2 = \frac{2000}{5}$$

$$L^2 = 400$$

$$\boxed{L = 20 \text{ m}}$$

$$A = L \cdot W = 1000$$

$$W = \frac{1000}{L}$$

$$5L + 2W$$

$$5L + 2\left(\frac{1000}{L}\right)$$

$$\boxed{5L + 2000L^{-1}}$$

~~$$5(20) + 2000(20)^{-1}$$~~

~~$$100 + 40000^{-1}$$~~

~~$$100 + \frac{1}{40000}$$~~

$$L = \boxed{20 \text{ m}}$$

Name:

emily conen

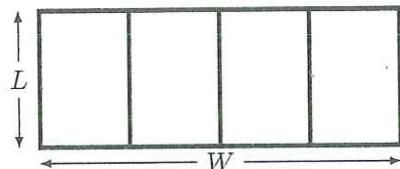
Perm Number:

5622949

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 \text{ m}^2 \quad P = 2W + 5L$$

$$A = l \cdot w$$

$$P = 2(1000/l) + 5l$$

$$l \cdot w = 1000$$

$$w = 1000/l$$

$$P = 2000/l + 5l$$

$$P = 2000l^{-1} + 5l$$

$$f(P) = -2000l^{-2} + 5$$

$$-2000l^{-2} + 5 = 0$$

$$-2000l^{-2} = 5$$

$$w = \frac{1000}{20}$$

$$w = 50 \text{ m}$$

$$2000/l^2 = 5$$

$$5l^2 = 2000$$

$$l^2 = 400$$

$$l = 20$$

 $L =$

20 m

Name: Sebastian Avila

Perm Number: 5976260

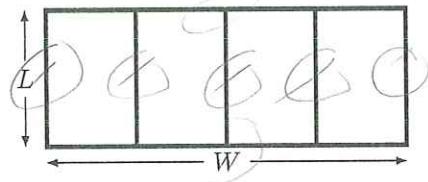
TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal

$$A = LW$$

$$P = 5L + 2W$$



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$\frac{1000 = LW}{L}$$

$$W = \frac{1000}{L}$$

$$P = 5L + 2000/L$$

$$5L + 2000L^{-1}$$

$$5 + (-2000)L^{-2}$$

$$5 - 2000L^{-2}$$

$$L^2 (5 - 2000L^{-2})$$

$$\frac{5L^2 - 2000}{5} = \sqrt{L^2 - 400}$$

$$L = 20$$

$$LW = 1000$$

$$W = 1000/L$$

$$5L + 2W =$$

$$\begin{array}{r} 400 \\ 5 \overline{) 2000} \\ -200 \\ \hline 00 \end{array}$$

$$\begin{array}{r} 20 \\ \times 20 \\ \hline 400 \end{array}$$

$$5L + 2(1000/L)$$

$$P = 5L + 2000/L = 5 + 2000L^{-1}$$

$$P'(L) = 5 - 2000L^{-2}$$

$$L^2 (5 - 2000L^{-2})$$

$$\frac{5L^2 - 2000}{5} = \sqrt{L^2 - 400}$$

$$L = 20$$

~~$$5(20) + 2000/20$$~~

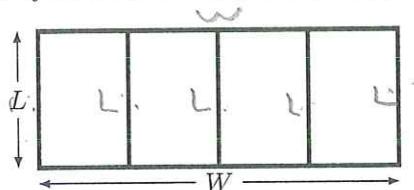
~~$$100 + 100 = 200$$~~

$L =$ 20

Name: **Stephanie Mita**Perm Number: **8038481**TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = l \cdot w$$

$$P = 5L + 2w$$

$$1000 = l \cdot w$$

$$P = 5L + 2\left(\frac{1000}{L}\right)$$

$$w = \frac{1000}{8}$$

$$P = 5L + 2000L^{-1}$$

$$\frac{1000}{20} = \frac{20w}{20}$$

$$P' = 5 - 2000L^{-2}$$

$$w = 50$$

$$0 = 5 - 2000L^{-2}$$

$$P = 5(20) + \frac{2000}{20}$$

$$-5 = -\frac{2000}{L^2}$$

$$= 100 + 100$$

$$-5L^2 = -2000$$

$$P = 200$$

$$\sqrt{L^2} = \sqrt{400} \quad L = 20$$

$$P = 5(20) + 2(w)$$

$$200 = 100 + 2w$$

$$L = 20 \text{ meters}$$

$$\frac{100}{2} = \frac{2w}{2} \quad w = 50$$

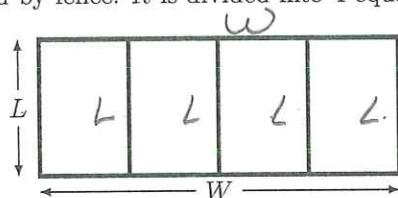
Name: Isabella Bishop

Perm Number:

3760204TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = L \times W$$

$$\frac{1000}{L} = \cancel{L} \times W$$

$$\text{Perimeter/ Total Fencing} = 2W + 5L$$

$$W = \frac{1000}{L}$$

$$F(L) = 2\left(\frac{1000}{L}\right) + 5L$$

$$F(L) = \frac{2000}{L} + 5L$$

$$\text{1) Find } \frac{d}{dx} F'(L) = \cancel{\frac{L}{2000L^{-1}}} + \cancel{5L^{10}}$$

$$F'(L) = -2000L^{-2} + 5$$

$$A = L \times W$$

$$\left. \begin{array}{l} 2) \text{Set } = 0 \\ \end{array} \right\} 0 = \frac{-2000}{L^2} + 5$$

$$\frac{1000}{20} = \frac{20 \times W}{20}$$

$$W = 50$$

$$\left(L^2 \right)^{-5} = \frac{-2000}{L^2} \left(\cancel{L^2} \right)$$

$$\begin{array}{r} 20 \\ \times 20 \\ \hline 400 \\ \times 400 \\ \hline 400 \end{array}$$

$$\frac{L^2(-5)}{-5} = -2000$$

$$\begin{array}{r} 400 \\ \times 5 \\ \hline 2000 \end{array}$$

$$\sqrt{L^2} = \sqrt{400}$$

$$L =$$

$$20 \text{m}$$

$$L = 20$$

$$W =$$

Name: Brandy Rodriguez

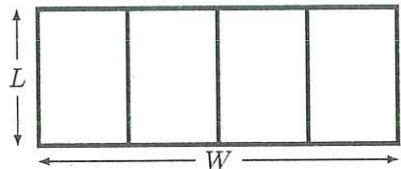
Perm Number:

6565634

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 \text{ m}^2$$

$$A = l w$$

$$w = \frac{1000}{l} \quad P(l) = 5l + 2\left(\frac{1000}{l}\right)$$

$$P(l) = 5l + \frac{2000}{l}$$

$$P'(l) = 5 + \frac{-2000}{l^2}$$

$$P'(l) = 5 - \frac{2000}{l^2} = 0$$

$$l^2 \cdot 5 = \frac{2000}{l^2} \cdot l^2$$

$$\frac{5l^2}{5} = \frac{2000}{5}$$

$$\sqrt{l^2} = \sqrt{400}$$

$$l = 20$$

$$5 \sqrt{2000} \\ 5 \sqrt{400 \cdot 50} \\ 5 \cdot 20 \sqrt{50}$$

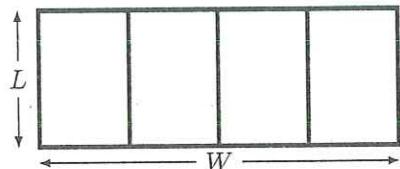
 $L =$

20

Name: Alvaro MatherPerm Number: 6596506TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$5l \cdot 2w = 1000 \text{ m}^2 \quad A = 1000 \text{ m}^2$$

$$\frac{5l}{5l} \cdot 2w = \frac{1000 \text{ m}^2}{5l}$$

$$5l \cdot 2 \left(\frac{1000 \text{ m}^2}{5l} \right) = 1000$$

$$w = \frac{1000 \text{ m}^2 \cdot 5l^{-1}}{2}$$

$$5l \cdot 1000 \cdot 5l^{-1} = 1000$$

$$l = \sqrt{2000}$$

$$c = 5l^2 \cdot 5 \cdot 1000$$

$$\sqrt{25000} = \sqrt{l^2}$$

$$5l^2 \cdot 5000 = 0$$

$$500$$

$$l^2 \cdot \frac{5}{l^2} \cdot 5000 = 0 \quad l^2$$

$$\begin{array}{r} 500 \\ 500 \\ \hline 0808 \\ 2502 \end{array}$$

5

 $L =$

Name:

Erich Castillo

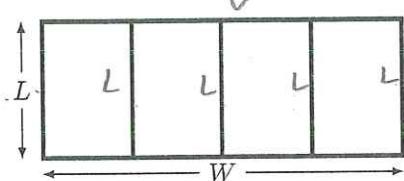
Permit Number:

5900857

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$5L \cdot 2w = 1000 \text{ m}^2 \quad A = 1000 \text{ m}^2 \quad A = L \cdot W \quad \text{first derivative and set equal to 0 & plug in}$$

$$5L \cdot 2w = 1000 \text{ m}^2$$

$$\frac{5L}{5} = \frac{1000 \text{ m}^2 - 2w}{5}$$

$$L = \frac{1000 \text{ m}^2 - 2w}{5}$$

$$\frac{10(500 - 1w)}{5}$$

$$2(500 - 1w)$$

$$1000 - 2w = 1000 \text{ m}^2$$

$$-w = \frac{1000 \text{ m}^2 - 1000}{2}$$

$$(5(\frac{1000 \text{ m}^2 - 2w}{5})(2w)) = 1000 \text{ m}^2$$

$$\frac{5000 \text{ m}^2 - 10w}{5}(2w) = 1000 \text{ m}^2$$

$$f(t) \frac{10000 \text{ m}^2 - 20w}{5} = 1000 \text{ m}^2$$

$$f(t) \frac{2000 \text{ m}^2 - 20w}{5} = 1000 \text{ m}^2$$

$$f'(t) = 5000 - 10(2) =$$

$$1000 - 2w(2) = 1000 \text{ m}^2 \quad 5000 - 10(2) = 0$$

$$\frac{2000 - 4w^2}{4} = 100 \text{ m}^2$$

$$-4w^2 + 2000 = 400 \text{ m}^2$$

$$\frac{5000}{5000} = \frac{-2w}{5000}$$

$$5(1000 \text{ m}^2 - 2w)(2)$$

$$L = \frac{1000 \text{ m}^2 - 2w}{5}$$

$$f' = 7000 \text{ m}^2 - 2(2) = 0$$

$$7000 \text{ m}^2 = w \quad \text{or} \quad 7000 = w + 4$$

Name:

Odalys Orclaz

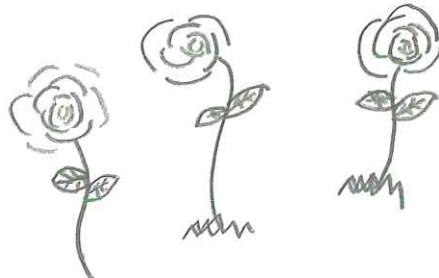
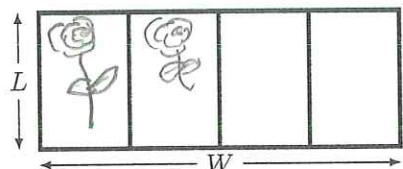
Perm Number:

6065536

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 \text{ m}^2 \quad l \cdot w = 1000 \text{ m}^2$$

$$A = l \cdot w$$

$$l = \frac{1000}{w}$$

$$w = \frac{1000}{l}$$

$$\frac{2000}{l}$$

$$P = 5L + 2W$$

$$L = \frac{200 \text{ cm}}{5l}$$

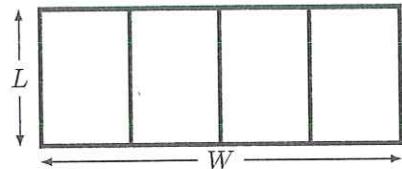
Name: Colin Gallivan

Perm Number:

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = LW = 1000$$

$$W = \frac{1000}{L}$$

$$\frac{1000}{20} = \frac{1000}{L}$$

$$20 = \frac{1000}{L}$$

$$L = \frac{1000}{20}$$

$$L = 50$$

$$W = 20$$

$$P = 5L + 2W$$

$$P = 5L + 2\left(\frac{1000}{L}\right)$$

$$P = 5L + \frac{2000}{L}$$

$$P = 5L + 2000L^{-1}$$

$$\frac{dP}{dx} = 5 - 2000L^{-2}$$

$$0 = 5 - 2000L^{-2}$$

$$2000L^{-2} = 5$$

$$L^2 = \frac{5}{2000}$$

$$2000 = 5L^2$$

$$L^2 = \frac{2000}{5}$$

$$L = \sqrt{\frac{2000}{5}}$$

$$L = 20$$

$$W = 50$$

$$\frac{5000}{W} + 2W$$

$$\frac{d}{dx} \downarrow$$

$$0 = 2 - 5000W^{-2}$$

$$5000W^{-2} = 2$$

$$\frac{5000}{W^2} = 2$$

$$\frac{5000}{2} = \frac{2}{W^2}$$

$$\sqrt{2500} = \sqrt{W^2}$$

$$W = 50$$

$$L \cdot 50 = \frac{1000}{L}$$

$$50L = \frac{1000}{L}$$

$$50 \cdot 50 = \frac{1000}{L}$$

$$L = 20$$

Name:

Max Levin

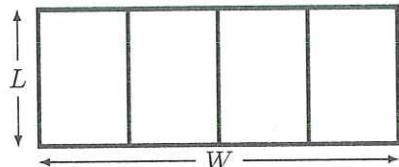
Perm Number:

4484886

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = (L)(w)$$

$$A = 1000 \text{ m}^2$$

$$(L)(w) = 1000$$

$$L = \frac{1000}{w}$$

~~1000~~

$$\text{Cost} = 3L + 2w$$

$$3\left(\frac{1000}{w}\right) + 2w$$

$$3L + 2w = 1000$$

$$\frac{3000}{w} + 2w$$

$$(L)(w) = 1000$$

$$\left(\frac{1000}{w}\right)w$$

~~1000~~ ~~w~~ ~~= 1000~~

$$3\left(\frac{1000}{w}\right) + 2w = 1000$$

$$\frac{3000}{w} + 2w = 1000$$

 $L =$

$$\frac{1000}{w}$$

Name:

Kellon Beckett

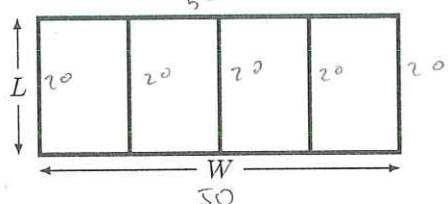
Perm Number:

479466-5

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal parts by 3 more dividing fences all parallel to one side of the field.



The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$w = \frac{1000}{l}$$

$$lw = 1000$$

$$P = 5l + 2w$$

$$P = 5l + 2\left(\frac{1000}{l}\right)$$

$$P = 5(20) + 2\left(\frac{1000}{20}\right)$$

$$f(l) = 5l + \frac{2000}{l}$$

$$P = 100 + 100$$

$$e(l) = 2000l^{-1} + 5l$$

$$200 = 5(20) + 2(w)$$

$$f'(l) = -2000l^{-2} + 5$$

$$\begin{cases} 100 = 2w \\ 50 = w \end{cases}$$

$$-2000l^{-2} + 5 = 0$$

$$-2000l^{-2} = -5$$

$$-2000 = -5l^2$$

$$400 = l^2$$

$$\boxed{20 = l}$$

$$L = \boxed{20}$$

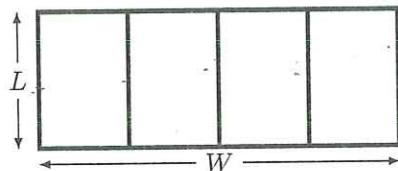
Name: Sam Andampauv

Perm Number:

6120505TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = L \cdot w = 1000 \text{ m}^2$$

$$L \cdot w = 1000 \text{ m}^2$$

$$D = 5L + 2w$$

$$w = \frac{1000}{L}$$

$$D = 5L + 2\left(\frac{1000}{L}\right)$$

$$5L + \frac{2000}{L} = 0$$

$$5L + 2000L^{-1} = 0$$

$$5 - 2000L^{-2} = 0$$

$$5 - \frac{2000}{L^2} = 0$$

$$5 = \frac{2000}{L^2}$$

$$L^2 = \frac{2000}{5}$$

$$L = 20 \text{ m}$$

$$L^2 = 400 \text{ m}^2$$

$$L = 20$$

Name: Jessica Amezcu

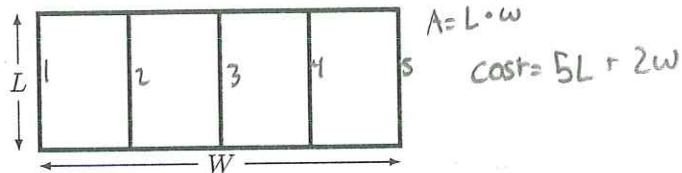
Perm Number:

5713481

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = L \cdot w = 1000 \quad w = \frac{1000}{L}$$

$$\begin{aligned} \text{total} \\ \text{needed} \end{aligned} = 5L + 2w$$

$$5L + 2\left(\frac{1000}{L}\right)$$

$$5L + \frac{2000}{L}$$

$$5L + 2000L^{-1}$$

$$0 = 5 + 2000L^{-2}$$

$$L^2 \cdot 5 = \frac{2000}{L^2}$$

$$\frac{5L^2}{5} = \frac{2000}{5}$$

$$L^2 = 400$$

$$\sqrt{L^2} = \sqrt{400}$$

$$\sqrt{400}$$

$$L = 20$$

$$\begin{array}{r} 20 \\ \times 20 \\ \hline 400 \end{array}$$

$$5(20) + \frac{2000}{20}$$

$$5(20) + 100$$

$$\begin{array}{r} 10 \\ \times 5 \\ \hline 50 \end{array}$$

$$5 \overline{)2000} \quad \begin{matrix} 400 \\ 20 \end{matrix}$$

$$\begin{array}{r} 400 \\ \times 5 \\ \hline 2000 \end{array}$$

$$L = \boxed{200}$$

Name:

<i>Yuxuan (Sophia) Pan</i>

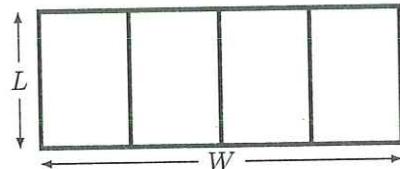
Perm Num:

<i>6463467</i>

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$WL = 1000$$

$$W = \frac{1000}{L}$$

$$\begin{aligned} \text{Perimeter} &= 5L + 2W \\ &= 5L + \frac{2000}{L} \end{aligned}$$

$$f(x) = 5L + \frac{2000}{L}$$

$$f'(x) = 5 - \frac{2000}{L^2}$$

$$5 - \frac{2000}{L^2} = 0$$

$$\frac{2000}{L^2} = 5$$

$$L^2 = 400$$

$$L = \sqrt{400} = 20$$

$$\begin{matrix} 4 \\ \sqrt{\frac{1000}{20}} \\ 10 \end{matrix}$$

$$WL = 1000$$

$$L = \frac{1000}{W}$$

$$P = 5L + 2W$$

$$= \frac{5000}{W} + 2W$$

$$= 5000W^{-1} + 2W$$

$$P' = -\frac{5000}{W^2} + 2$$

$$\begin{aligned} L &= \frac{1000}{50} \\ &= 20 \end{aligned}$$

$$2 - \frac{5000}{W^2} = 0$$

$$\frac{5000}{W^2} = 2$$

$$2W^2 = 5000$$

$$W^2 = 2500$$

$$W = 50$$

$$W = 50$$

$$L = \boxed{20}$$

Name: Vivian de Waart

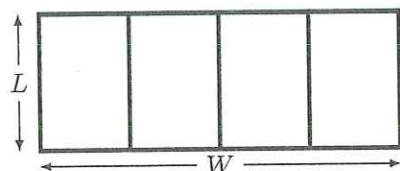
Perm Number:

5177530

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 \text{ m}^2$$

$$A = l \cdot w$$

$$\frac{l \cdot w}{w} = \frac{1000}{w}$$

$$P = 5l + 2w$$

$$l = \frac{1000}{w}$$

$$P = 5\left(\frac{1000}{w}\right) + 2w$$

$$P(w) = \frac{5000}{w} + 2w$$

$$\text{or } 5000w^{-1} + 2w = P(w)$$

$$P'(w) = -5000w^{-2} + 2$$

$$\frac{l}{w} \cdot \frac{50}{50} = \frac{1000}{50}$$

$$P'(w) = 0$$

$$0 = -\frac{5000}{w^2} + 2$$

$$w^2 \cdot \frac{5000}{w^2} = 2 \cdot w^2$$

$$\frac{5000}{2} = \frac{2w^2}{2}$$

$$\sqrt{w^2} = \sqrt{2500}$$

$$w = 50$$

 $L =$

20

 $\frac{50}{2} = 2500$

Name:

Natasha Gavriloff

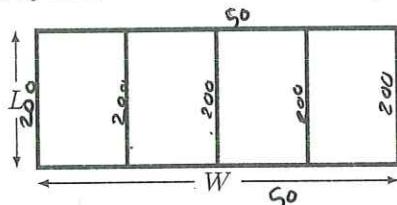
Perm Number:

6773113

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$\underline{A = l w = 1000 \text{ m}^2}$$



$$\text{fence} = 5l + 2w$$

 l

$$\text{fence} = 5l + 2\left(\frac{1000}{l}\right)$$

$$w = \frac{1000}{l}$$

$$f = 5l + 2000l^{-1}$$

$$f' = 5 - 2000l^{-2}$$

$$0 = 5 - 2000l^{-2}$$

$$-5 - 5$$

$$+5 = +2000l^{-2}$$

$$2000 = l^{-2}$$

$$0.0025 = l^{-2}$$

$$\begin{array}{r} 0.0025 \\ 2000 \sqrt{5000} \\ \underline{-4000} \\ 1000 \end{array}$$

$$\begin{array}{r} 0.0400 \\ 5 \sqrt{2000} \\ \underline{-20} \\ 00 \end{array}$$

 $L =$

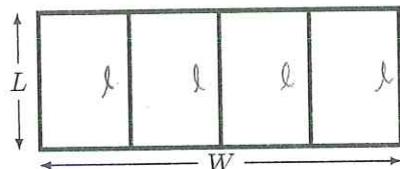
200

Name: Rebekka Kaber	Form Number: 5084769
----------------------------	-----------------------------

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 = l \cdot w$$

$$w = \frac{1000}{l}$$

$$P = 5l + 2w$$

$$\hookrightarrow 5l + 2\left(\frac{1000}{l}\right)$$

$$P = 5l + 2\left(\frac{1000}{l}\right)$$

$$P = 5l + \frac{2000}{l}$$

$$P = 5l + 2000l^{-1}$$

$$P' = 5 - 2000l^{-2}$$

$$0 = 5 - \frac{2000}{l^2}$$

$$\frac{2000}{l^2} = 5$$

$$2000 = 5l^2$$

$$\frac{2000}{5} = l^2$$

$$400 = l^2$$

$$l = 20$$

$$\begin{array}{r} 20 \\ \times 20 \\ \hline 400 \end{array}$$

$$\begin{array}{r} 400 \\ \times 5 \\ \hline 2000 \end{array}$$

$$20 \cdot w = 1000$$

$$w = 50$$

$$L = \boxed{20}$$

$$w = 50$$

Name:

Mariah Ford

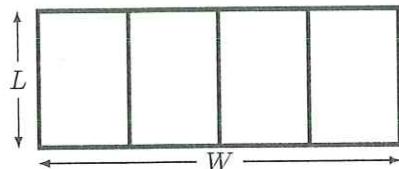
Perm Number:

6144893

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 = l \times w$$

$$P = 5l + 2w$$

$$P = 5l + 2\left(\frac{1000}{l}\right)$$

$$5l + \frac{2000}{l}$$

$$1000 = l \times w$$

$$1000 = 20 \times w$$

$$w = 50$$

$$5 - 2000l^{-2} = 0$$

$$5 = \frac{2000}{l^2}$$

$$P = 5(20) + 2(50)$$

$$l^2 = 400$$

$$l = 20$$

$$P = 100 + 100$$

$$P = 200 \text{ m}$$

minimum amount

$$L =$$

20 m

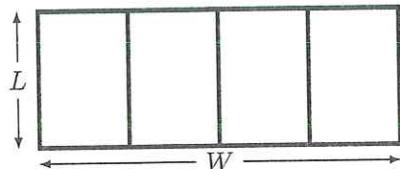
Name:

Penn Number:

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$\begin{aligned}
 A &= l \cdot w \\
 \frac{1000 \text{ m}^2}{w} &= \frac{l \cdot w}{w} \\
 l &= \frac{1000}{w} \\
 d' &= 1000 \cdot w^{-1} \\
 d'' &= -1000w^{-2} \\
 p &= 4(2l) + 2w \\
 &= 16w + 2w \\
 &= 18w
 \end{aligned}$$

$$L =$$

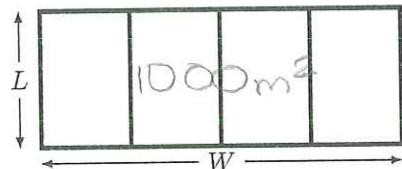
Name:

Perm Number:

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$2l + 2w$$

$$2l + 2\left(\frac{1000}{l}\right)$$

$$lw = 1000$$

$$w = \frac{1000}{l}$$

$$l = \frac{1000}{w}$$

$$O = 2 - 2000l^{-2}$$

$$\frac{2000}{l^2} = 2 \rightarrow \frac{2000}{2} = l^2 \rightarrow \sqrt{1000} = \sqrt{l^2}$$

$$100 = l$$

$$L =$$

$$100$$

Name:

Aiden Afrasiabi

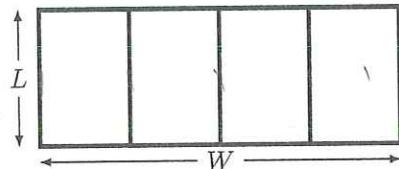
Perm Number:

5229869

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



$$\begin{array}{r} 400 \\ \times 5 \\ \hline 2000 \end{array}$$

parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000$$

$$A = l \times w$$

$$5l + 2w$$

$$\frac{1000}{w} = l$$

$$5\left(\frac{1000}{w}\right) + 2w$$

$$5l + 2\left(\frac{1000}{l}\right)$$

$$\frac{5000}{w} + 2w = l$$

$$5l + \frac{2000}{l}$$

$$5000w^{-1} + 2w$$

$$5l + 2000l^{-1}$$

$$-5000w^{-2} + 2 = 0$$

$$5 - 2000l^{-2} = 0$$

$$(w^2) - 5000w^{-2} = -2(w^2)$$

$$(l^2) - 5 = -2000l^{-2} (l^2)$$

$$\frac{-5000}{-2} = \frac{-2w^2}{-2}$$

$$\frac{-5l^2}{-5} = \frac{-2000}{-5}$$

$$\sqrt{2500} = \sqrt{w^2}$$

$$\sqrt{l^2} = \sqrt{400}$$

$$w = 50$$

$$l = 20$$

$$L =$$

$$\sqrt{20}$$

Name:

Christopher Boling

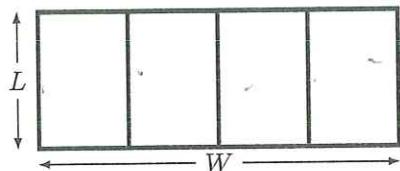
Perm Number:

6065534

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 = l \cdot w$$

$$\frac{1000}{l} = w$$

$$P = 5l + 2w$$

$$P = 5\left(\frac{1000}{l}\right) + 2w$$

$$P = 5l + 2\left(\frac{1000}{l}\right)$$

$$P = \frac{5000}{w} + 2w$$

$$P = 5l + \frac{2000}{l}$$

$$P' = -\frac{5000}{w^2} + 2$$

$$P' = \frac{2000}{l^2} + 5$$

$$0 = -\frac{5000}{w^2} + 2$$

$$0 = -\frac{2000}{l^2}$$

$$-\frac{2}{w^2} = -\frac{5000}{w^2} \cdot w^2$$

$$\frac{5l^2}{5} = -\frac{2000}{-5}$$

$$\frac{-2w^2}{-2} = \frac{-5000}{-2}$$

$$l = 4000$$

$$\sqrt{w^2} = \sqrt{2500}$$

$$w = 20$$

50
50
00
00
2500

$$L =$$

20

Name:

Jessica Taghizadeh

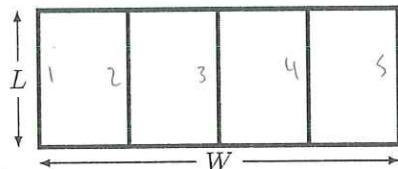
Perm Number:

6681472

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

↑
derivative
at 0

$$A = l \cdot w$$

$$5l + 2w = 1000 - 5l$$

$$-5l \quad \frac{\partial w}{\partial l} = \frac{1000 - 5l}{2}$$

$$w = 500 - 2.5l$$

$$\frac{1000}{5l} = \frac{5l + 2w}{5l}$$

$$A = l \cdot w$$

$$\frac{1000}{l} = \frac{l + w}{l}$$

$$w = \frac{1000}{l}$$

$$l \left(\frac{1000}{l} \right) \rightarrow \frac{1000l}{l^2}$$

$$s(20) \cdot 2000$$

$$f'(x)$$

$$L =$$

20

Name:

Taylor Iden

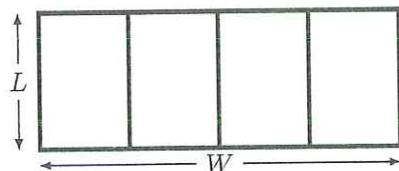
Perm Number:

5709441-5

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 \text{ m}^2$$

$$L \cdot W = 1000$$

$$2W + 2L = 1000$$

$$2L = 1000 - 2W$$

$$L = \frac{1000 - 2W}{2}$$

$$L = 500 - W$$

$$L = 500 - W$$

$$W = 500 - L$$

$$L = 500 - W$$

$$1000 = 2(500 - W) + 2L \quad L'(0) = 1$$

$$L = [500]$$

Name: Joelle Haddad

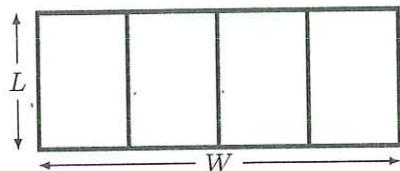
Perm Number:

4700282

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$l \cdot w = \frac{1000}{l} = w$$

$$5l + 2w = P$$

$$5l + \frac{200}{l} = P$$

$$5l - 200l^{-2}$$

$$5 - 200e^{-2} = 0$$

$$(5)^{-1} = (200e^{-2})^{-1} \quad + 2000l^{-2} = +5$$

$$2\sqrt{5^{-1}} = 200e^2$$

$$\frac{1000}{l} = w$$

$$5l + \frac{2000}{l} = P$$

$$5l + 2000l^{-1} = P$$

$$5 - 2000l^{-2} = P$$

$$5 - 2000l^{-2} = 0$$

$$5 - 200e^{-2} = 0$$

$$(2000l^{-2}) = (5)^{-1}$$

$$2000l^{-2} = \frac{5^{-1}}{2000}$$

$$\frac{5^{-1/2}}{200} = \frac{200e}{200} \quad \frac{1}{200\sqrt{5}} = l \quad L = \boxed{1/\sqrt{5}(2000)}$$

Name: Riley Clark

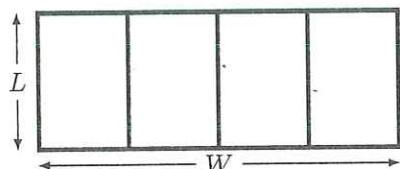
Perm Number:

5155312

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 = l \cdot w$$

$$w = \frac{1000}{l}$$

$$5l + 2w \\ 5l + 2\left(\frac{1000}{l}\right) = 5l + 2000l^{-1}$$

$$P(l) = 5 - 2000l^{-2} = 0$$

$$5 = \frac{2000}{l^2}$$

$$l^2 = 400$$

$$l = 20$$

$$L = 20 \text{ m}$$

Name: Ela Schulz

Period 15

Perm Number:

52951-83

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

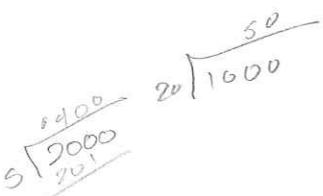
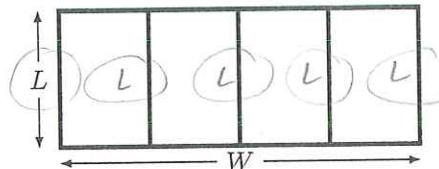
check?

$$l \cdot w = 1000$$

$$5L + 2w = P$$

$$w = \frac{1000}{L}$$

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m². Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$P = 5L + \frac{2000}{L}$$

$$2000 = 5L^2$$

$$P = 5L + 2000L^{-1}$$

$$L^2 = 400$$

$$P' = 5 - 2000L^{-2}$$

$$L = 20$$

$$2000L^{-2} = 5$$

$$20 \cdot w = 1000$$

$$w = 50$$

$$5L + 2w = \text{perimeter}$$

$$A = l \cdot w$$

$$1000 = l \cdot w$$

$$\begin{array}{r} 50 \\ 20 \\ \hline 1000 \end{array}$$

$$w = \frac{1000}{l}$$

$$5L + 2\left(\frac{1000}{l}\right) = P$$

$$A = l \cdot w$$

$$5L + \frac{2000}{l} = P$$

$$1000 = 20 \cdot w$$

$$400$$

$$5L + 2000L^{-1} = P$$

$$\begin{array}{r} x \\ \times s \\ \hline 2000 \end{array}$$

$$w = \frac{1000}{20}$$

$$2000$$

$$P' = 5 - 2000L^{-2}$$

$$w = 50$$

$$5$$

$$0 = 5 - 2000L^{-2}$$

$$20$$

$$L^2 (2000L^{-2} = 5) L^2$$

$$20$$

$$2000 = 5L^2$$

$$00$$

$$5L^2 = 2000$$

$$400$$

$$L^2 = 400$$

$$\checkmark$$

$$L = 20$$

$$L = 20 \text{ m}$$

$$w = 50 \text{ m}$$

Name:

Desiree Espinoza

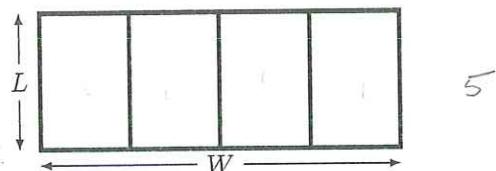
Perm Number:

4736211

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m². Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$L \cdot W = 1000 \quad 5L + 2W \left(\frac{1000}{L} \right) = P$$

$$5L^2 = 1000$$

$$2000 = 5L^3$$

$$400 = 5L$$

$$2 \left(\frac{5000}{L} \right)$$

$$L =$$

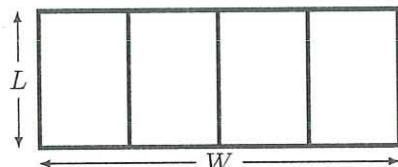
$$20$$

Name: Ray HERNANDEZ Student Number: 5714902

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 \text{ m}^2$$

$$\cancel{L} \cdot W = \underline{\underline{1000 \text{ m}^2}}$$

$$5L + 2W$$

$$W = \frac{1000 \text{ m}^2}{L}$$

$$5L + 2\left(\frac{1000 \text{ m}^2}{L}\right)$$

$$5L + \frac{2000}{L}$$

$$2000L^{-1} + 5L$$

$$-2000L^{-2} + 5$$

$$-5 = \frac{-2000}{L^2}$$

$$\begin{array}{r} \times 20 \\ 20 \\ \hline 400 \end{array}$$

$$\cancel{-5}L^2 = \cancel{-2000} \quad \frac{L^2}{-5}$$

$$L = \boxed{20}$$

$$\sqrt{L^2} = \sqrt{400} \quad L = 20$$

Name:

Nathan Starkovich

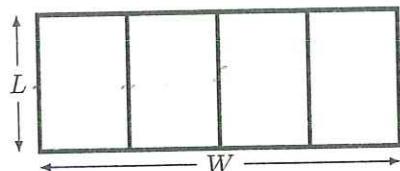
Perm Number:

4191813

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 \text{ m}^2 = l w$$

$$\frac{1000}{l} = w$$

$$P = 2w + 5l$$

$$P = \frac{2000}{l} + 5l$$

$$\frac{1000}{l} = w$$

$$w = 50$$

$$0 = \frac{-2000}{l^2} + 5$$

$$-5 = \frac{2000}{l^2}$$

$$-5l^2 = -2000$$

$$l^2 = 400$$

$$l = 20$$

$$50 \cdot 20 = 1000 \checkmark$$

$$L =$$

20

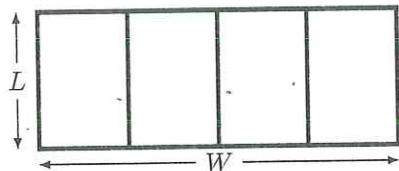
Name: Candice Moreno

Perm Number: 1234567890

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = l \cdot w = \frac{1000 \text{ m}^2}{w} \quad P = 4l + 2w$$

$$l = \frac{1000}{w} \quad 4\left(\frac{1000}{w}\right) + 2w$$

$$\frac{4000}{w} + 2w$$

$$f(x) = \frac{4000}{w} + 2w$$

$$\frac{f'(x)}{2} = \frac{-4000w^{-2} + 2}{2} = 0$$

$$\frac{4000}{w} + 2 = 0$$

$$\frac{4000}{w} = -2$$

$$w = \frac{4000}{2}$$

$$w = -2000$$

$$w = -2000$$

$$w = -1$$

$$L =$$

$$\sqrt{2000}$$

Name:

Hider Sparkle

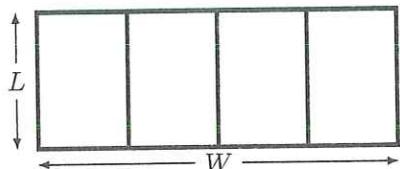
ID Number:

5990625

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = Lw = 1000$$

$$l \cdot \frac{1000}{l} = A$$

$$\frac{1000}{l} = w$$

$$2l + 2w$$

$$2l + 2\left(\frac{1000}{l}\right)$$

$$2l + \frac{2000}{l} = \text{Fence}$$

$$2 - 2000l^{-2} = 0$$

$$l^2 \left(-\frac{2000}{l^2}\right) + 2 = 0 \quad l^2$$

$$-2000 + 2 = l^2$$

$$\sqrt{-1998} = l^2$$

$$L = \sqrt{-1998}$$

Name:

Brooke Ryan

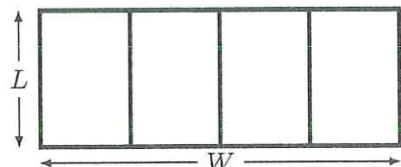
Perm Number:

3857836

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 = LW$$

$$W = \frac{1000}{L}$$

$p = \text{perimeter}/\text{total fencing}$

$$4L + 2\left(\frac{1000}{L}\right) = p$$

$$4L + 2000L^{-1} = p$$

$$\textcircled{D} \quad 4 - 2000L^{-2} = 0$$

$$\frac{1000}{25} = \frac{25 \cdot w}{25}$$

$$40 = w$$

$$\frac{4}{2000} = \frac{1}{L^2}$$

$$\frac{1}{500} \approx \frac{1}{L^2}$$

$$\sqrt{L^2} \Rightarrow \sqrt{500}$$

$$L = 25$$

$$L = 25 \text{ m}$$

Name:

CONNELL TRAIVOR

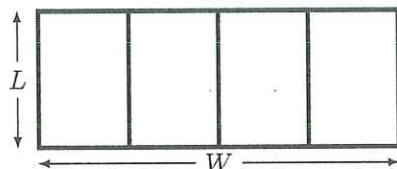
Perm Number:

6872899

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 = LW \quad \therefore \quad L = \frac{1000}{W}$$

$$F = 2W + 5L$$

$$F = 2W + \frac{5000}{W}$$

$$= 2W + \frac{5000}{W}$$

$$F' = 2 - \frac{5000}{W^2} = 0 \quad (\text{min})$$

$$2 = \frac{5000}{W^2}$$

$$2W^2 = 5000$$

$$W^2 = 2500$$

$$W = 50$$

$$L = \frac{1000}{50}$$

$$= 20$$

$$L = \boxed{20}$$

$$W = 50$$

Name:

Mason Montgomery

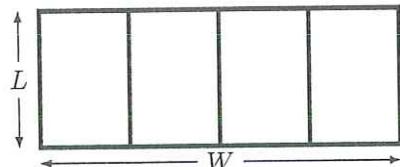
Perm Number:

392956

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000$$

$$P = 5l + 2w$$

$$A = lw$$

$$\frac{1000}{w} = l$$

$$P = 5\left(\frac{1000}{w}\right) + 2w$$

$$P = \frac{5000}{w} + 2w$$

$$P' = -\frac{5000}{w^2} + 2$$

$$-\frac{5000}{w^2} + 2 = 0$$

$$\frac{5000}{2} = \frac{2w}{2}$$

$$2500 = w$$

$$\sqrt{2500} = w$$

$$50 = w$$

$$A = 50l$$

$$\frac{1000}{50} = \frac{50l}{50}$$

$$20 = l$$

$$L =$$

20

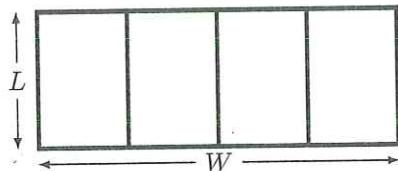
Name: Ian Flucang

Perm Number:

3926909TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = L \cdot W \quad 1000 = L \cdot W$$

$$W = \frac{1000}{L}$$

$$P' = 5 - 2000L^{-2}$$

$$O = 5 - 2000L^{-2}$$

$$O = (5 - 2000L^{-2})L^2$$

$$O = 5L^2 - 2000$$

$$2000 = 5L^2$$

$$W = \frac{1000}{20} = 50$$

$$400 = L^2$$

$$\boxed{W=50}$$

$$\boxed{L=20}$$

$$L = \boxed{20}$$

$$W = 50$$

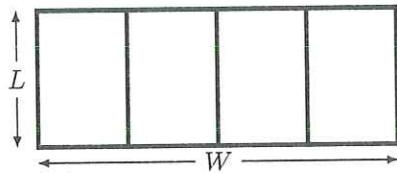
Name:

Perm Number:

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



$$L \cdot W = 1000$$

parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$5L + 2W$$

$$W = \frac{1000}{L}$$

$$f(L) = 5L + 2 \times \frac{1000}{L}$$

$$= 5L + \frac{2000}{L}$$

$$= 5L + L^{-1} \cdot 2000$$

$$f'(L) = 5 + 2000(-1) \cdot L^{-2}$$

$$\cancel{-} 5 - 2000L^{-2}$$

$$f'(L) = 0 \quad 5 - 2000L^{-2} = 0$$

$$5 = 2000L^{-2}$$

$$\frac{1}{400} = \frac{1}{L^2}$$

$$L^2 = 400$$

$$L = 20$$

$$L =$$

Name:

Harrison Giordano

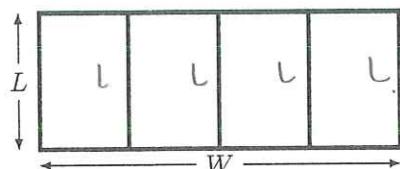
Perm Number:

5884150

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m². Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000$$

$$A = L(W) = 1000$$

$$W = \frac{1000}{L}$$

$$L = 20$$

$$W = \frac{1000}{20} = 50$$

$$P = 5L + 2W$$

$$P = 5L + 2(1000)$$

$$P = 5L + 2000L^{-1}$$

$$P = 5 + 2000L^{-2}$$

$$2000L^{-2} = 5 \cdot L^2$$

$$2000 = 5L^4$$

$$400 = L^2$$

$$L = 20$$

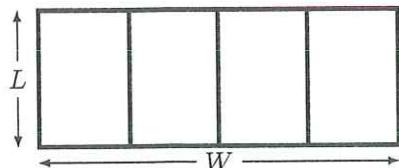
$$L = 20$$

$$W = 50$$

Name:	<i>Kat Brydson</i>	Student Number:	<i>5100805</i>		
TA: Trevor	<input checked="" type="checkbox"/>	Daniel	<input type="checkbox"/>	Jeremy	<input type="checkbox"/>
Day:	T <input checked="" type="checkbox"/>	R	<input type="checkbox"/>	Time:	8 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



$$A = 1000 \text{ m}^2$$

parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$F = 5l + 2\left(\frac{1000}{l}\right)$$

$$\begin{aligned} l \cdot w &= 1000 \text{ m}^2 = \\ w &= \frac{1000 \text{ m}^2}{l} \end{aligned}$$

$$F = 5l + \frac{2000}{l}$$

$$F' = 5 - 2000 l^{-2} = 0$$

$$5 = \frac{2000}{l^2}$$

$$\frac{5l^2}{5} = \frac{2000}{5}$$

$$\sqrt{l^2} = \sqrt{400}$$

$$l = 20$$

$$w = \frac{1000}{20} = 50$$

$L =$

20

Name:

Isabella Agrosa

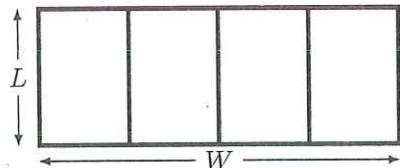
Term Number:

3962537

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000$$

$$1000 = l \cdot w$$

$$\frac{1000}{l} = w$$

$$w = \frac{1000}{l} \quad l = 50$$

$$P = 5l + 2w$$

$$P = 5l + 2(50)$$

$$P = 5l + 100$$

$$-100 = 5l$$

$$= l$$

$$A = l \cdot w$$

$$P = 5l + 2w$$

$$P = 5l + 2\left(\frac{1000}{l}\right)$$

$$P = 5l + \frac{2000}{l} \rightarrow 2000l^{-1}$$

$$P' = 5 - 2000l^{-2}$$

$$0 = 5 - \frac{2000}{l^2}$$

$$-5 = -\frac{2000}{l^2}$$

$$l^2 = \frac{2000}{5}$$

$$\sqrt{l^2} = \sqrt{400}$$

$$\boxed{l = 20}$$

 $L =$ $\boxed{20}$

Name:

Noelle Mugima

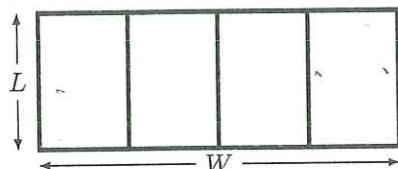
Permit Number:

61504410

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$lw = 1000$$

$$w = \frac{1000}{l}$$

$$5l + 2w$$

$$5l + 2\left(\frac{1000}{l}\right)$$

$$5l + \frac{2000}{l}$$

$$5l + 2000l^{-1}$$

$$-2000l^{-2} + 5$$

$$-2000l^{-2} = -5$$

$$l^{-2} = \frac{1}{400}$$

$$\frac{1}{l^2} = \frac{1}{400} \rightarrow l^2 = 400 \rightarrow l = 20$$

~~$$2000l^{-2}$$~~

$$\frac{5}{2000} = \frac{1}{400}$$

$$w = \frac{1000}{20} = 50$$

$$L = \boxed{20}$$

Name:

Fleurche Jada

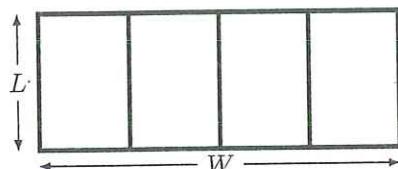
Perm Number:

5279351

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = 1000 \text{ m}^2$$

$$P = 5L + 2W$$

$$A = L \cdot W$$

$$P = 5L + 2\left(\frac{1000}{L}\right)$$

$$W = \frac{1000}{L}$$

$$P = 5L + 2000L^{-1}$$

$$W = \frac{1000}{20}$$

$$P' = 5 - \frac{2000}{L^2}$$

$$\boxed{W = 50}$$

$$P' = 0$$

$$0 = 5 - \frac{2000}{L^2}$$

$$\sqrt[4]{2000}$$

$$\frac{2000}{L^2} = 5$$

$$2000 = 5L^2$$

$$400 = L^2$$

$$\boxed{L = 20}$$

$$L = \boxed{20}$$

Name:

Kyla Drengler Spin

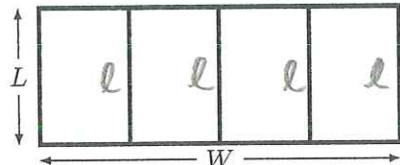
Perm Number:

8696767

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$\text{area} = L \cdot w$$

$$P = 2w + 5L$$

$$\frac{1000}{L} = \frac{L \cdot w}{L}$$

$$P = 2\left(\frac{1000}{L}\right) + 5L$$

$$\frac{1000}{L} = w$$

$$P = \frac{2000}{L} + 5L$$

$$\frac{1000}{20} = w$$

$$P' = -\frac{2000}{L^2} + 5$$

$$\cancel{50} = w$$

$$P' = -\frac{2000}{L^2} + 5$$

$$+5 = +\frac{2000}{L^2}$$

$$2000 \cdot \frac{1}{5} = \frac{L^2}{2000} \cdot 2000$$

$$\frac{400}{5} = \frac{L^2}{2000}$$

$$\sqrt{400} = \sqrt{L^2}$$

$$\cancel{20} = L$$

$$L =$$

20

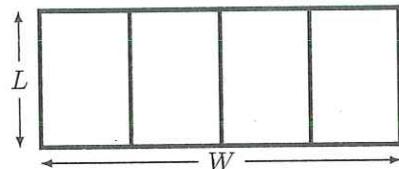
Justin Jose

5345780

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m². Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = L \cdot w = \frac{1000}{L}$$

$$w = \frac{1000}{L} \rightarrow L \cdot \left(\frac{1000}{L}\right) = 1000$$

1000 = 1000

$$F = 5L + 2w$$

$$5L + 2\left(\frac{1000}{L}\right)$$

$$F = 5L + \frac{2000}{L} \quad w = \frac{1000}{20} \rightarrow w = 50$$

$$F'(L) = 5 + \left(2000L^{-2}\right)$$

$$0 = 5 - 2000L^{-2}$$

$$-5 = \frac{-2000}{L^2}$$

$$L^2 \cdot 5 = \frac{2000}{L^2} \cdot L^2 \quad L^2 = 400$$

$$\frac{5L^2}{5} = \frac{2000}{5} \quad L = 20$$

$$L = \boxed{20}$$

Name:

LUISA CARCANO

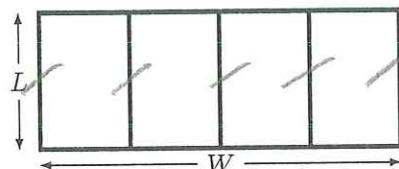
Perm Number:

6185915

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m². Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 = LW$$

$$5L + 2w = P$$

$$L = 20$$

$$\frac{1000}{L} = w$$

$$5L + \frac{2000}{L} = P$$

$$1000 = 20(w)$$

$$P'(L) = 5 - \frac{2000}{L^2}$$

$$w = 50$$

$$0 = 5 - \frac{2000}{L^2}$$

$$5 = \frac{2000}{L^2}$$

$$5L^2 = 2000$$

$$L^2 = 400$$

$$L = \pm 20$$

$$L =$$

$$20$$

$$w = 50$$

Name:

Annalise Evans

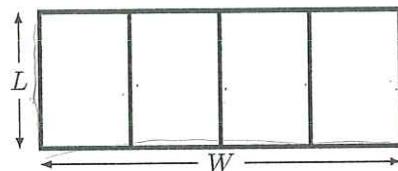
Perm Number:

5301023

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$1000 = L \cdot W$$

$$W = \frac{1000}{L}$$

$$F = 5L + 2W = 5L + 2\left(\frac{1000}{L}\right)$$

$$F(L) = 5L + \frac{2000}{L}$$

$$F'(L) = 5 + 2000L^{-1}$$

$$F'(L) = 5 - 2000L^{-2}$$

$$0 = 5 - 2000L^{-2}$$

$$(L^2)(5) - (2000L^{-2})(L^2)$$

$$5L^2 = 2000$$

$$L^2 = \frac{2000}{5}$$

$$L^2 = 400$$

$$L = 20$$

$$W = \frac{1000}{20} = 50$$

$$L =$$

$$20 \text{ m}$$

Name:

Victoria McNabb

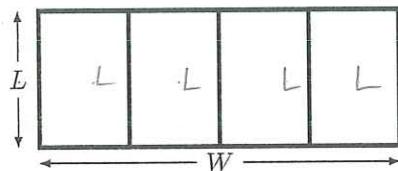
Perm Number:

5171038

TA: Trevor Daniel Jeremy Day: T R Time: 8 5 6 7

Quiz 10

- 1) A rectangular field is surrounded by fence. It is divided into 4 equal



parts by 3 more dividing fences all parallel to one side of the field. The field must have an area of 1000 m^2 . Find the dimensions for L and W that will yield the minimum amount of fencing needed.

$$A = L \times w = \frac{1000}{L} \quad P = 2w + 5L$$

$$w = \frac{1000}{L} \quad P = 2\left(\frac{1000}{L}\right) + 5L$$

$$P = \frac{2000}{L} + 5L$$

$$P' = -\frac{2000}{L^2} + 5 = 0$$

$$\frac{5L^2}{5} = \frac{2000}{5}$$

$$\sqrt{L^2} = \sqrt{400}$$

$$L = 20 \text{ m}$$

$$\begin{array}{r} 400 \\ \times 5 \\ \hline 2000 \end{array}$$

$$A = L \times w = 1000$$

$$\frac{20 \times w}{20} = \frac{1000}{20}$$

$$w = 50 \text{ m}$$

$$L = 20 \text{ m}$$