

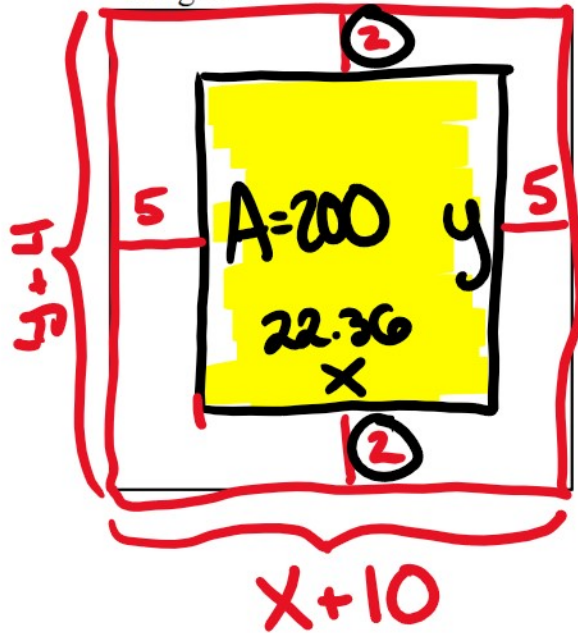
# Poster Notes

Wednesday, June 12, 2019 7:14 AM

## AREA

A poster will contain 200 square centimeters of text with a 2 cm margin on top and bottom and a 5 cm margin on the left and right. What overall dimensions would minimize the paper used for the poster? Find the area.

Diagram:



Equation A:  $200 = x \cdot y$   
(given info)

Equation A:  $y = \frac{200}{x}$   
(new version)

Equation B:  $A = (x+10)(y+4)$   
(max/min)

Equation B:  $A = 4x + 2000x^{-1} + 240$   
(new version)

Equation B:  $A' = 4 - 2000x^{-2} = 0$   
(1st derivative)

$$x^2 \cdot 4 = \frac{2000}{x^2} \cdot x^2$$

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

$$x = 22.36$$

$$y = 8.94$$

$x = 22.36$   
Length:  $32.36$   
(with margins)

$y = 8.94$   
Width:  $12.94$   
(with margins)

Area:  $418.74$   
(with margins)