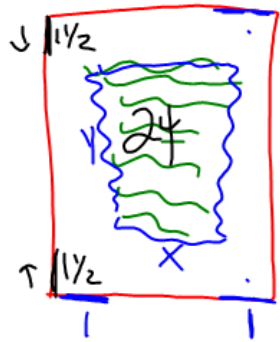


Find Min Area

24 sq. in of print



least amount of paper

S.E. $\rightarrow 24 = xy$

P.E. $\rightarrow A = (x+2)(y+3)$

① $y = \frac{24}{x}$

② $A = (x+2)\left(\frac{24}{x} + 3\right)$

$A = 24 + 3x + \frac{48}{x} + 6$

$A' = 3 - \frac{48}{x^2}$

$0 = 3 - \frac{48}{x^2}$

$-3 = -\frac{48}{x^2}$

$-3x^2 = -48$

$x^2 = 16$

$x = \pm 4$

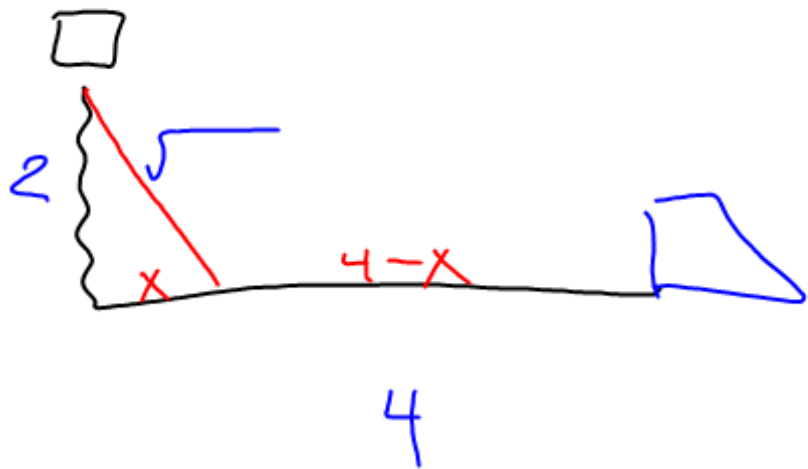
$x = 4$

$y = \frac{24}{4}$
 $y = 6$

$A' = 3 - \frac{48}{x^2}$
③ $A'' = 96x^{-3}$
 $A'' = \frac{96}{x^3} > 0$
when $x=4$

So A is a min
when $x=4$ and $y=6$ in
The paper will
be 6 in x 9 in

Cost \rightarrow P. Σ
 S. Σ . \rightarrow Pythagorean.



$$C(x) = 2K \left(\begin{array}{c} \text{water} \\ \text{land} \end{array} \right) + K \left(\begin{array}{c} \text{land} \\ \text{water} \end{array} \right)$$