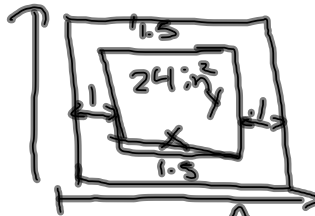


24 in² of print

top + bottom margins @ 1.5 in

R + L margins @ 1 in



minimize page area

$$xy = 24 \quad x = \frac{24}{y}$$

$$A = (2+x)(3+y)$$

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

$$A = 6 + 2y + \frac{72}{y} + 24$$

$$\frac{dA}{dy} = 2 + -72y^{-2} \quad \rightarrow 72y^{-1}$$

$$0 = 2 - \frac{72}{y^2}$$

$$\frac{72}{y^2} = 2$$

$$72 = 2y^2$$

$$y^2 = 36$$

$$y = +6$$

$$\frac{d^2A}{dy^2} = 72(2)y^{-3}$$

$$= 144y^{-3}$$

$$= 144 \cdot 6^{-3}$$

2nd der > 0

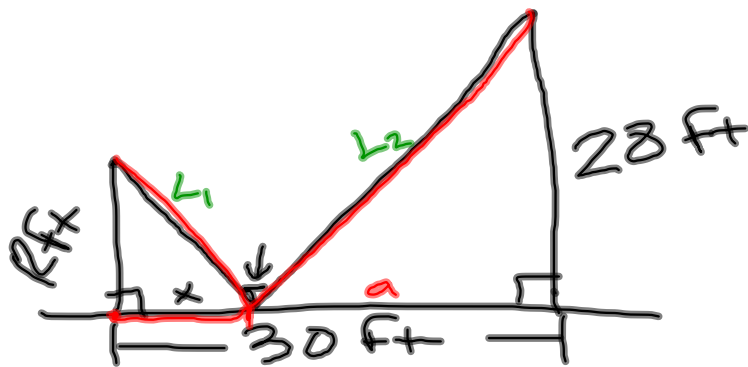
minimum @ y = 6

$$x = 4 \quad y = 6$$

$$l = x + 2 = 4 + 2 = 6$$

$$w = y + 3 = 6 + 3 = 9$$

$$\boxed{6 \times 9}$$



$$a = 30 - x$$

$$L = L_1 + L_2$$

$$L_2^2 = 12^2 + x^2$$

$$L_1 = \sqrt{144 + x^2}$$

$$L_2 = \sqrt{(30-x)^2 + 784}$$

$$L = \sqrt{144 + x^2} + \sqrt{(30-x)^2 + 784}$$

$$(144 + x^2)^{1/2} \quad (900 - 60x + x^2 + 784)^{1/2}$$

$$\frac{dL}{dx} = \frac{1}{2}(144 + x^2)^{-1/2}(2x)$$

$$+ \frac{1}{2}(1684 - 60x + x^2)^{-1/2}(-60 + 2x)$$