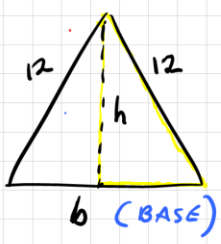


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$$A = \frac{1}{2} b \times h$$

OBJECTIVE EQUATION

NOTICE RIGHT ANGLE TRIANGLE.

$$12^2 = h^2 + \left(\frac{1}{2} b\right)^2$$

$c^2 = a^2 + b^2$

$$144 = h^2 + \frac{1}{4} b^2$$

CONSTRAINT EQUATION

SUB CONSTRAINT INTO OBJECTIVE.

$$A = \frac{1}{2} b h$$

$$A = \left(\frac{1}{2} b\right) \left(\sqrt{144 - \frac{b^2}{4}}\right)$$

$$A' = \frac{1}{2} \left(\sqrt{144 - \frac{b^2}{4}}\right) + \left(\frac{1}{2} b\right) \frac{1}{2} \left(144 - \frac{b^2}{4}\right)^{-\frac{1}{2}} \cdot \left(-\frac{2b}{4}\right)$$

$$A' = \frac{1}{2} \left(\sqrt{144 - \frac{b^2}{4}}\right) + \frac{-2b^2}{16} \left(144 - \frac{b^2}{4}\right)^{-\frac{1}{2}}$$

$$A' = \frac{1}{2} \left(\sqrt{144 - \frac{b^2}{4}}\right) + \frac{-b^2}{8 \sqrt{144 - \frac{b^2}{4}}}$$

$$0 = \frac{1}{2} \left(\sqrt{144 - \frac{b^2}{4}}\right) + \frac{-b^2}{8 \sqrt{144 - \frac{b^2}{4}}}$$

$$\frac{b^2}{8 \sqrt{144 - \frac{b^2}{4}}} = \frac{1}{2} \sqrt{144 - \frac{b^2}{4}}$$

$$\frac{b^2}{4} = 144 - \frac{b^2}{4}$$

$$\frac{2b^2}{4} = 144$$

$$\frac{b^2}{2} = 144$$

$$b^2 = 288$$

$$b = 16.97$$