

$$\frac{a-x}{b-y} = \frac{b}{a} \Rightarrow y = b - \frac{a^2}{b} + \frac{ax}{b}$$

$$S = \frac{b}{c}x + \frac{a}{c}\left(b - \frac{a^2}{b} + \frac{ax}{b}\right) + \sqrt{(a-x)^2 + \left(\frac{a^2}{b} - \frac{ax}{b}\right)^2}$$

$$S = \frac{b}{c}x + \frac{a \cdot b}{c} - \frac{a^3}{bc} + \frac{a^2x}{bc} + \sqrt{(a-x)^2 + \frac{a^2}{b^2}(a-x)^2}$$

$$S = \frac{b}{c}x + \frac{ab}{c} - \frac{a^3}{bc} + \frac{a^2x}{bc} + (a-x) \cdot \sqrt{1 + \frac{a^2}{b^2}}$$

$$S = \frac{b}{c}x + \frac{ab}{c} - \frac{a^3}{bc} + \frac{a^2x}{bc} + (a-x) \cdot \frac{c}{b}$$

$$S = \left(\frac{b}{c} + \frac{a^2}{bc} - \frac{c}{b}\right)x + \frac{ab}{c} - \frac{a^3}{bc} + \frac{ac}{b}$$

$$S = \frac{\cancel{b^2 + a^2 - c^2}}{bc} \cdot x + \frac{ab^2 - a^3 + ac^2}{bc}$$

$$S = \frac{a \cdot (b^2 + c^2 - a^2)}{b \cdot c} = \frac{a \cdot (2b^2)}{b \cdot c}$$

$$\boxed{S = \frac{2ab}{c}}$$

