8. $$\left[b^2 - \frac{a}{1+\left(\frac{b-a}{a}\right)^{-1}} \cdot \left(\frac{ab}{b-a} - a\right)\right] : \frac{a^2+ab+b^2}{b} =$$

$$= \left[b^2 - \frac{a}{1+\frac{a}{b-a}} \cdot \left(\frac{ab-a(b-a)}{b-a}\right)\right] \cdot \frac{b}{a^2+ab+b^2} =$$

$$= \left[b^2 - \frac{\overset{1}{a}}{\frac{b\cancel{-a+a}}{b-a}} \cdot \frac{\cancel{ab-ab}+a^2}{b-a}\right] \cdot \frac{b}{a^2+ab+b^2} =$$

$$= \left[b^2 - \left(\frac{a}{1} : \frac{b}{b-a}\right) \cdot \frac{a^2}{b-a}\right] \cdot \frac{b}{a^2+ab+b^2} =$$

$$= \left[b^2 - \left(\frac{a \cdot \cancel{(b-a)}}{b}\right) \cdot \frac{a^2}{\cancel{b-a}}\right] \cdot \frac{b}{a^2+ab+b^2} =$$

$$= \left(b^2 - \frac{a^3}{b}\right) \cdot \frac{b}{a^2+ab+b^2} =$$

$$= \frac{b^3-a^3}{\cancel{b}} \cdot \frac{\cancel{b}}{a^2+ab+b^2} = \frac{(b-a)\cancel{(b^2+ab+a^2)}}{\cancel{a^2+ab+b^2}} =$$

$$= b-a$$

$$a \neq 0$$

$$b \neq 0$$

$$a \neq b$$