$$3s^2 + \frac{101}{6}s - \frac{73}{9}$$

$$3\left[s^2 + \frac{101}{(3)(6)}s - \frac{7.3}{(3)(9)}\right]$$

$$3\left[s + \frac{1}{2}\bigcirc\right]^2 - \frac{7.3}{(3)(9)} - \bigcirc$$

$\bigcirc$ = $\frac{101}{(3)(6)}$

$\bigcirc$ = $\frac{101}{(3)(6)}$

Completing the Square!

$$\frac{3s+17}{5s^2-7s+41}$$

$$\swarrow \; -\frac{7}{5}\cdot\frac{1}{2}=-\frac{7}{10}$$

$$\frac{}{5\left[S+\left(-\frac{7}{10}\right)\right]^2+\frac{41}{5}\left(-\frac{7}{10}\right)^2\Big]}$$

$$\frac{3\left(S-\frac{7}{10}+\frac{7}{10}\right)+17}{5\left[S-\frac{7}{10}\right]^2+\frac{41}{5}-\frac{7}{10}^2\Big]}$$

(S in the numerator; S in the denominator; $\frac{41}{5}-\frac{7}{10}^2$ underbraced; α^2)

Replace S with $S-\frac{7}{10}$

$$\frac{3s+3\cdot\frac{7}{10}+17}{5(s^2+\alpha^2)} \rightarrow \frac{3}{5}\,\frac{s}{s^2+\alpha^2}+\frac{\frac{21}{10}+\frac{17}{5}}{5}\cdot\frac{1}{s^2+\alpha^2}$$