BONUS ASSIGNMENT
943-DW
OCTOBER 8th 2014
Prof. E. RICHER

solutions

Simplify.

$$\sqrt{2+a^{-1}b+ab^{-1}} + \sqrt{a^4b^2+2a^3b^2+a^2b^2}$$

Solution.

$$= \sqrt{2+\frac{b}{a}+\frac{a}{b}} + \sqrt{a^2b^2(a^2+2a+1)}$$

$$= \sqrt{\frac{2ab+b^2+a^2}{ab}} + \sqrt{a^2b^2(a+1)^2}$$

$$= \sqrt{\frac{(a+b)^2}{ab}} + ab(a+1)$$

$$= \frac{a+b}{\sqrt{ab}} + ab(a+1)$$

$$= \frac{(a+b)\sqrt{ab}}{ab} + ab(a+1)$$

$$= \frac{a\sqrt{ab}}{ab} + \frac{b\sqrt{ab}}{ab} + ab(a+1)$$

$$= \boxed{\frac{\sqrt{ab}}{b} + \frac{\sqrt{ab}}{a} + ab(a+1)}$$