2022 Problem Of The Day

1. (**21 Mar**) Simplify the algebraic fraction $\dfrac{a^4-a^2b^2}{(a-b)^2} \div \dfrac{a(a+b)}{b^2} \times \dfrac{b}{a}$.

Solution:

$$\frac{a^4-a^2b^2}{(a-b)^2} \div \frac{a(a+b)}{b^2} \times \frac{b^2}{a} = \frac{\cancel{a^2}(a+b)(a-b)}{(a-b)^{\cancel{2}}} \times \frac{b^2}{\cancel{a(a+b)}} \times \frac{b^2}{\cancel{a}}$$

$$= \frac{b^4}{a-b}$$