

$$\frac{c(a^2 + b^2)}{(a + b)} \times \frac{(a + b)^2}{c^4(a^2 + b^2)^{-2}}$$

Rewrite the expressions for further simplification as follows,

$$\frac{c(a^2 + b^2)}{(a + b)} \times \frac{(a + b) \cdot (a + b) \cdot (a^2 + b^2)^2}{c^3 \cdot c}$$

Then cancel out some expressions, such as,

$$\begin{aligned} & \frac{c(a^2 + b^2)}{(a + b)} \times \frac{(a + b) \cdot (a + b) \cdot (a^2 + b^2)^2}{c^3 \cdot c} \\ & \frac{(a^2 + b^2)}{1} \times \frac{(a + b) \cdot (a^2 + b^2)^2}{c^3} \\ & \frac{(a + b)(a^2 + b^2)^3}{c^3} \end{aligned}$$

Therefore, the quotient of the given problem is $\frac{(a+b)(a^2+b^2)^3}{c^3}$.

5. Find the quotient of the following: $\frac{a^4\sqrt{a^3}}{b^2} \div \frac{\sqrt{a^5}}{b^4}$.

Solution:

$$\frac{a^4\sqrt{a^3}}{b^2} \div \frac{\sqrt{a^5}}{b^4}$$

Take the reciprocal of the second term, then proceed to multiplication, so we have,