

Name: ANSWER KEY

Score: _____

Simplify: $\frac{5a^2 + 12a + 4}{a^4 - 16} \cdot \frac{a^2 - 2a}{25a^2 + 20a + 4}$

$$= \frac{\cancel{(5a+2)}\cancel{(a+2)}}{\cancel{(a-2)}\cancel{(a+2)}(a^2+4)} \cdot \frac{a\cancel{(a-2)}}{(5a+2)\cancel{a}}$$

$$= \boxed{\frac{a}{(a^2+4)(5a+2)}}$$

$$5a^2 + 12a + 4 = 5a^2 + 10a + 2a + 4 = 5a(a+2) + 2(a+2) = (5a+2)(a+2)$$

$$a^4 - 16 = (a^2 - 4)(a^2 + 4) = (a-2)(a+2)(a^2 + 4)$$