1.

The domain is all values that a is allowed to be.
Since I can't divide by zero (division by zero isn't allowed,
I need to find all values of a that would cause division by zero.
The domain will then be all other a-values.
 When is this denominator equal to zero?

$5\,a^4 + 25 = 0$

impossible , then the domain of c is $(-\infty,\infty)$ i.e. $a \in \mathbb{R}$