Among all students major in math, at least 90 percent of them choose applied routes in their future studies and careers. This is because pure mathematics require its researchers to be much gifted in math and more importantly, be willing to devote much of his lifes in his works and studies which may not even yelid any results at the end of their lives. In other word, pure mathematical researcheres should be indifferent to fame and wealth and have great passion and dedication in math. However, applied math is a more interesting and diversified subject. People can combine mathematical tools and models with whatever interest them as well as richen them.

A pure mathematician defines a field of numbers, develops the concept of vectors , define vector spaces,find some of the properties of vector spaces ,generalise to functional spaces, define hilbert spaces and so on.  
On the other hand an applied mathematician would find how to use this concept of Cartesian co-ordinate system to solve some problems, in other words how can this mathematical concept be applied.

Applied mathematics like pure mathematics plays a crucial role in science. In physics many concepts of pure mathematics are now applied ( so in a sense physics is applied mathematics) .  
Take the example of General Theory of Relativity. Differential geometry ,( in layman terms - calculus in manifolds / in higher abstract spaces) is used extensively .And now even topology is used.  
Another example - Group theory ( abstract algebra) . A pure math stuff , but used extensively in physics and chemistry ( in economics too ) .  
So the work of an abstract mathematician is to apply these abstract seemingly unrelated concepts to problems faced in science or in real life.  
One other thing applied mathematicians usually do is , create mathematical models.  
A mathematical model is a description of a system using mathematical concepts and language.

It may seem from my answer that pure mathematics and applied mathematics are somewhat different things, the reality is not quite so . it is often hard to distinguish between the two,because there is a huge overlap.

This is roughly what a pure mathematics student is required to study before research.  
Analysis , Abstract Algebra ( groups , rings , fields , ... ) , Topology and differential geometry , Theory of numbers .  
This is roughly what an applied mathematics student is required to study before research.  
Analysis , differential equations , linear programming , Abstract algebra ( not in that much detail ) , numerical analysis , dynamics and some other things.

I say this because pure mathematics in all its specialities is often focused on questions of existence and uniqueness vis-a-vis problem solutions. Applied mathematics, on the other hand, is interested in realizing these solutions as applications to real world problems.