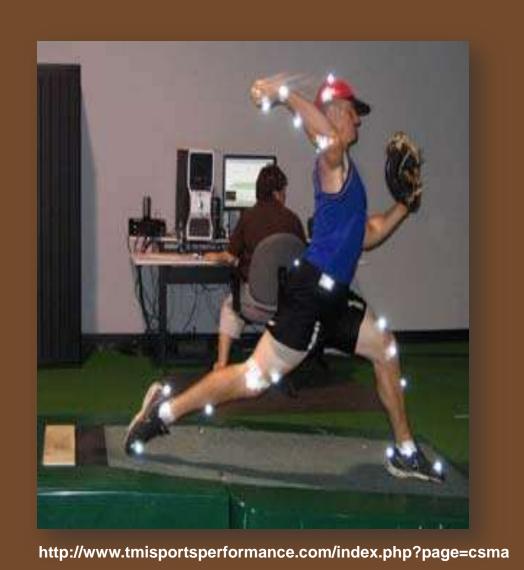


Biomechanics of Motion



Sports:

Athletes' motions are analyzed to improve their performance.





A baseball pitcher's movements are analyzed to determine how he can change his wind up to increase the speed of his pitch.

Animation/Films:

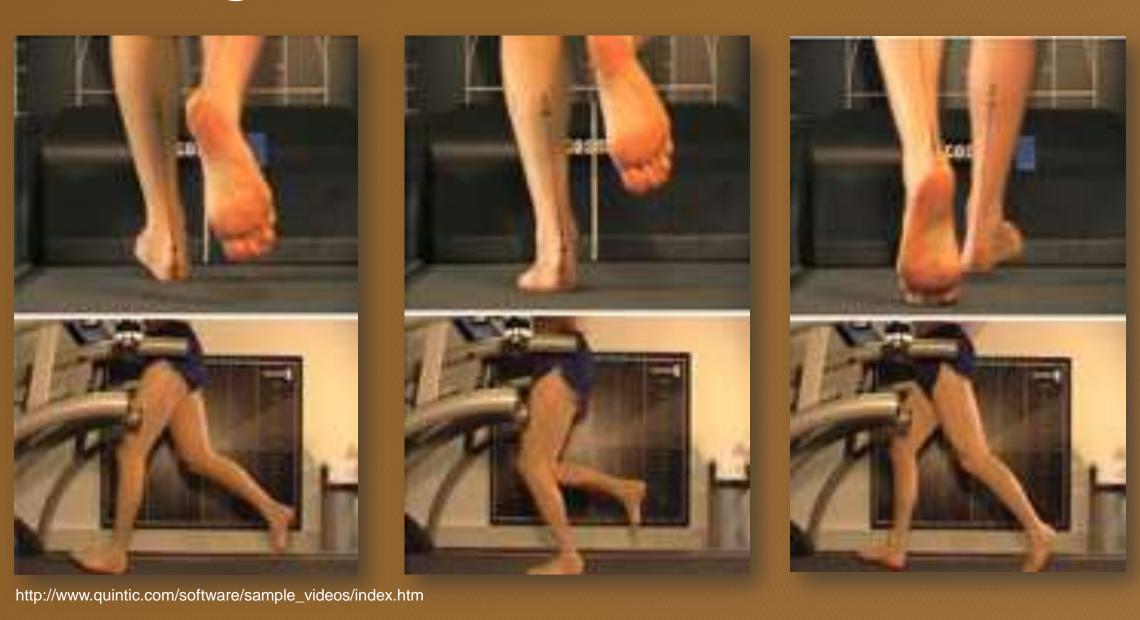
One of the greatest challenges Pixar, Dreamworks, and other animation film



makers face is making film makers face is making life—like animations. The picture shows how Tom Hank's motions where analyzed for the film *Polar Express*.

Motion Analysis and Prosthetics

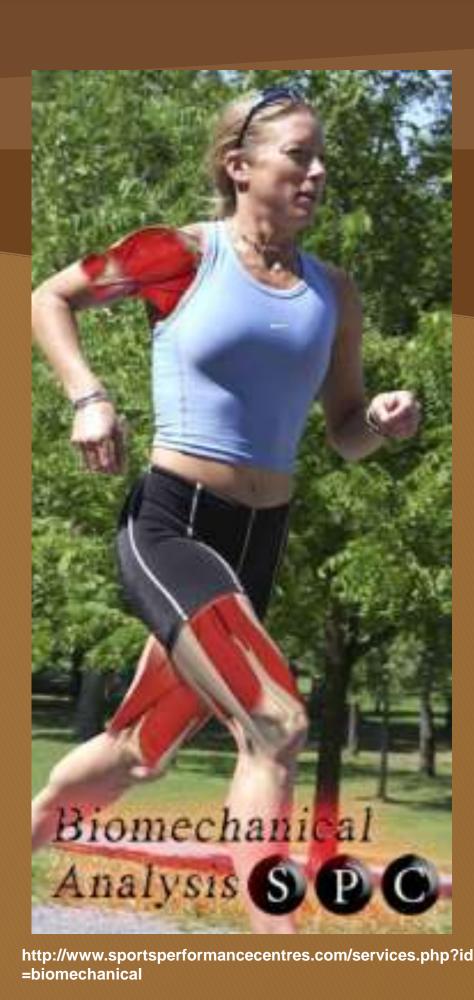
The best prostheses replicate the biomechanics of the human limb that they replace. Prosthetic feet manufacturers test their feet designs out to ensure it closely replicates a normal human gait.





Applications:





 $v = \Delta d/\Delta t$ $a = \Delta v/\Delta t$

For example, if I run 10 meters in 5 seconds, how fast am I going? Or what if I speed up from 6 m/s to 10 m/s in 2 seconds, what is my acceleration?

s/w = (30)/(s/w) = ss/w = (30)/(s/w) = s