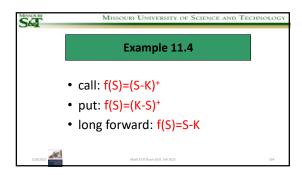
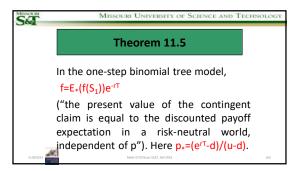


160 161 162

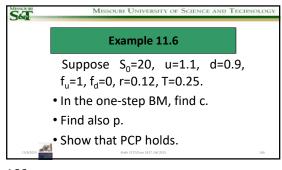
Definition 11.3

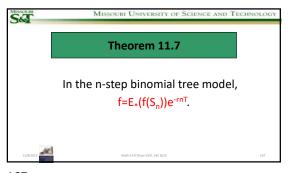
By a European derivative security or contingent claim with stock S as the underlying asset we mean a random variable of the form f(S(T)), where f is a given function, called the payoff.

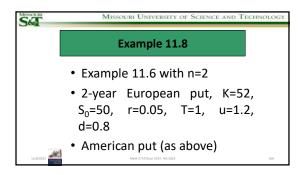




163 164 165





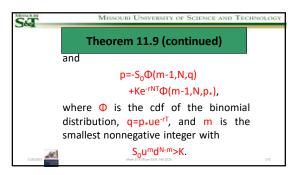


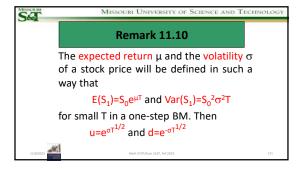
166 167 168

Theorem 11.9

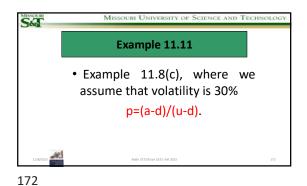
(Cox-Ross-Rubinstein formula)

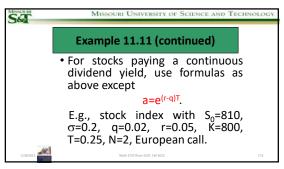
In the binomial model, the price of a European call and put with strike price K to be exercised after N time steps is  $c=S_0[1-\Phi(m-1,N,q)]$   $-Ke^{-rNT}[1-\Phi(m-1,N,p_*)]$ 





169 170 171







Example 11.11 (continued)

 Options on futures: Futures price should have an expected growth rate of zero. Use previous formulas with

 a=1.