Some Exotic Options

1 Binary Options (Cash or Nothing Call and Asset or Nothing Call):

Suppose you have a portfolio that consists of
1. a long position in an asset or nothing call with strike price 20.
2. a long position in a cash or nothing call option with strike price 20 and cash
   reward 20.

The underlying asset and the expiration date for all options are the same for all these
European options.
A) What is the payoff from this portfolio if at expiration asset price turns out to be 15?
B) What is the payoff from this portfolio if at expiration asset price turns out to be 50?

2) Asset or Nothing Call

Suppose you have a long position in an asset or nothing call with strike price 30.
Illustrate the final portfolio payoff as a function of the underlying asset price at expiration
in a graph.

3) Cash or Nothing Call:

Suppose you have a long position in a cash or nothing call with strike price 30 and cash
reward 30. Illustrate the final portfolio payoff as a function of the underlying asset price
at expiration in a graph.

4. Cash or Nothing Call and Cash in a Portfolio:

Suppose you have a portfolio that consists of
1. a long position in a cash or nothing call option with strike price 30 and
   cash reward 30.
2. $100 of cash.
   Illustrate the final portfolio payoff as a function of the underlying asset price
   at expiration in a graph.