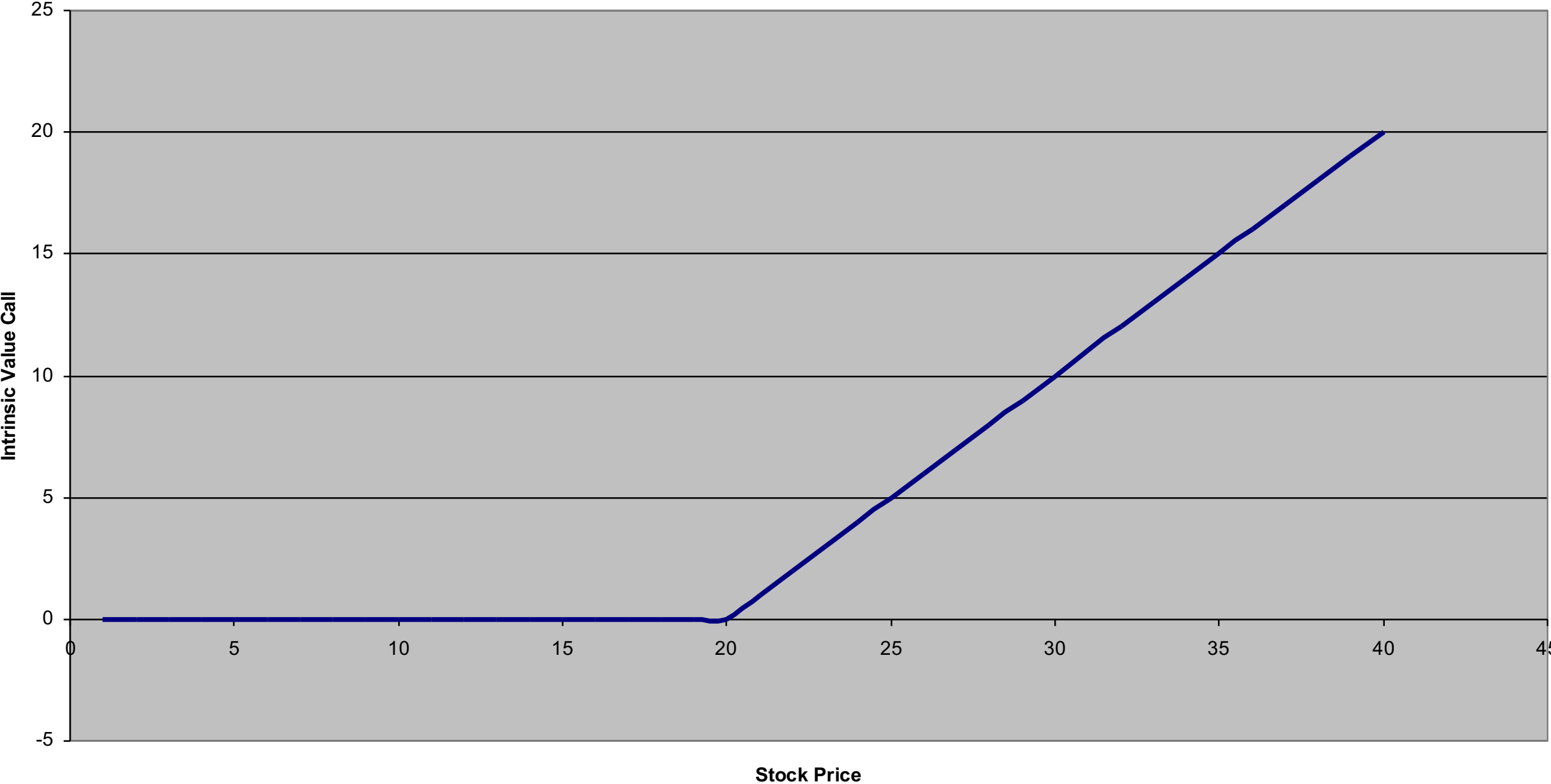
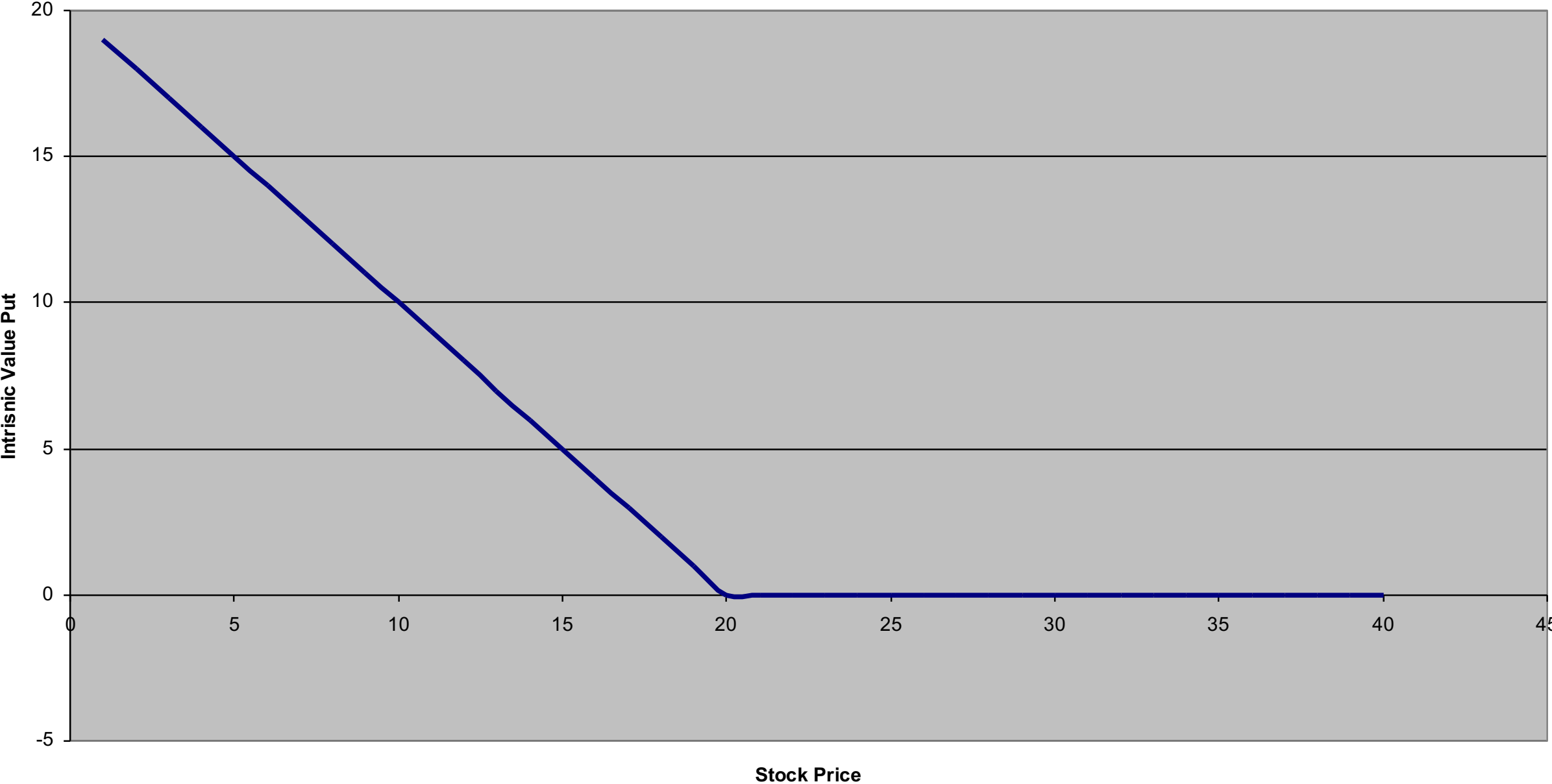


Exercise Price = 20



Exercise Price = 20



# Chicago Board Options Exchange

## April 2016 Quotes for Intel Corp

Share Price \$31.63, Dividend \$0.26 per Quarter

### Calls

JANUARY 2018 (EXPIRATION: 01/19)

Strike	Last	Net	Bid	Ask	Vol	Int
INTC1819A27-E	7.05	0.0	6.05	6.20	0	875
INTC1819A30-E	4.80	0.0	4.30	4.40	0	3391
INTC1819A32-E	3.31	0.0	3.30	3.45	0	2741
INTC1819A35-E	2.36	0.0	2.16	2.25	0	11586

### Puts

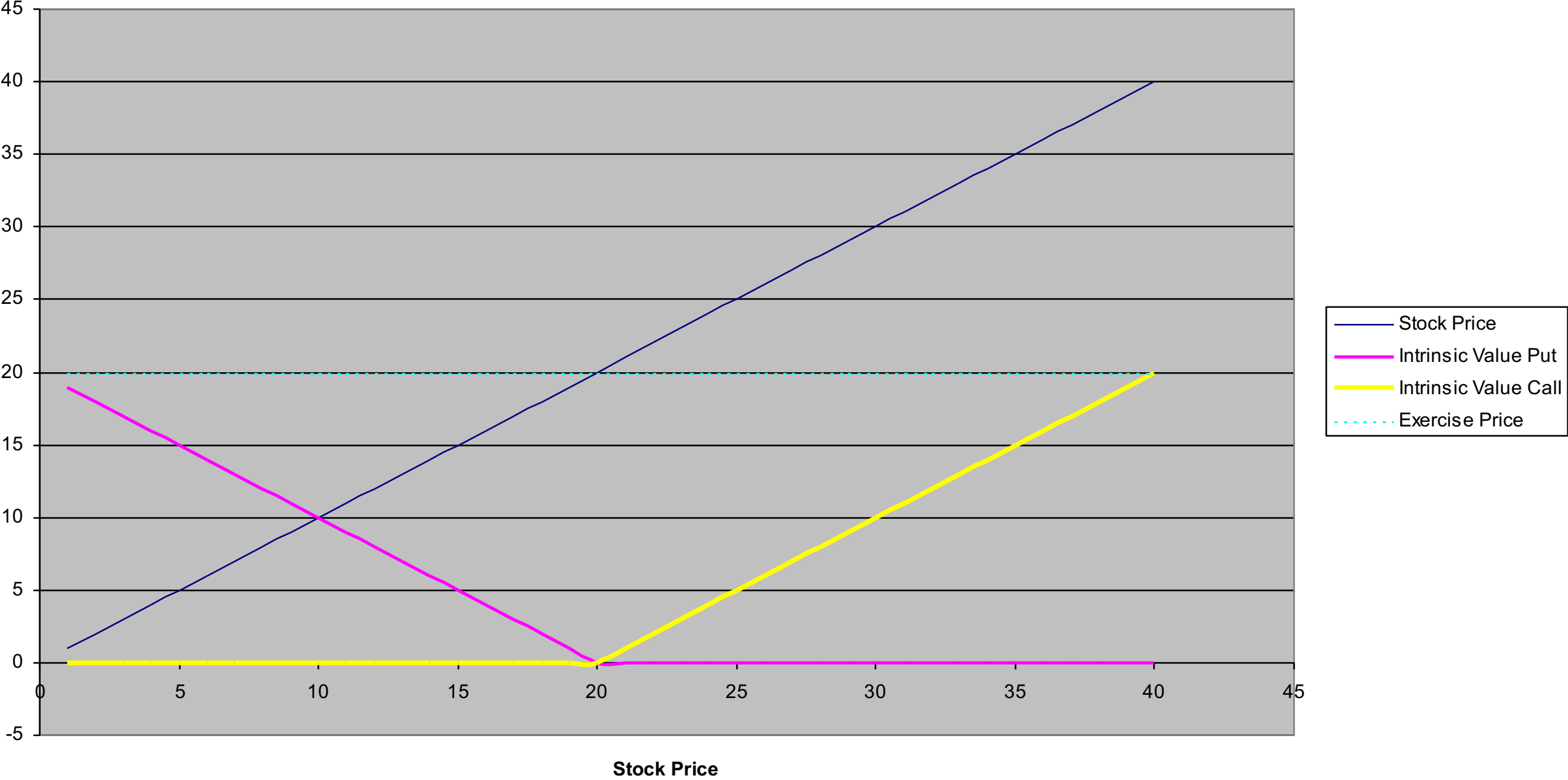
JANUARY 2018 (EXPIRATION: 01/19)

Strike	Last	Net	Bid	Ask	Vol	Int
INTC1819M27-E	2.65	0.0	2.62	2.71	0	5735
INTC1819M30-E	3.65	0.0	3.85	3.95	0	4152
INTC1819M32-E	5.20	0.0	4.85	5.00	0	559
INTC1819M35-E	6.20	0.0	6.70	6.85	0	5649

## Put-Call Parity Relation

- Put option price – call option price = present value of strike price + present value of dividends – price of stock
- Price of stock = call price + pdv strike + pdv dividends – put price
- For Intel Corp \$31.63 strike 27 for  $r=0$ , midpoint
- $(6.05+6.2)/2+27+2.08-(2.62+2.71)/2=\$32.54$
- For European options, this formula must hold (up to small deviations due to transactions costs), otherwise there would be arbitrage profit opportunities

# Put Call Parity Relation Derivation



# Limits on Option Prices

- Call should be worth more than intrinsic value when out of the money
- Call should be worth more than intrinsic value when in the money
- Call should never be worth more than the stock price

Exercise Price = 20, r=5%, T=1,sigma=.3

