

53. Assume the Black-Scholes framework. For a European put option and a European gap call option on a stock, you are given:

- (i) The expiry date for both options is T .
- (ii) The put option has a strike price of 40.
- (iii) The gap call option has strike price 45 and payment trigger 40.
- (iv) The time-0 gamma of the put option is 0.07.
- (v) The time-0 gamma of the gap call option is 0.08.

Consider a European cash-or-nothing call option that pays 1000 at time T if the stock price at that time is higher than 40.

Find the time-0 gamma of the cash-or-nothing call option.

- (A) -5
- (B) -2
- (C) 2
- (D) 5
- (E) 8