(1)

nCr = (n!)/(r!(n-r)!)
عدد الطرق الممكنة لاختيار طالبين من قسم الذكاء الاصطناعي يساوي:

250C2 = (250!)/(2!(250-2)!)
= (250249)/(21)
= 31,125
---
(2)

n! / (n1! * n2! * ... * nk!)
5! / (3! * 2!) = (5 * 4 * 3 * 2 * 1) / ((3 * 2 * 1) * (2 * 1)) = 10 * 4 = 40
---
(3)

2^(5-2) = 2^3 = 8
---
(4)

30P3 = 30 * 29 * 28 = 24360
---
(5)

6C3 = (6!)/(3!(6-3)!) = (654)/(32*1) = 20
---
(6)

6 × 6 = 36
36 × 36 × 36 = 46656
5 × 5 = 25
25 × 25 × 25 = 15625
1 - (15625 / 46656) = 0.665 ≈ 66.5%
---
(7)

6 - 2 =4

2 × 4 = 8
4 + 8 = 12
---
(8)

2 × 2 × 2 × 2 × 2 × 22C9 = 54,264,576
1 × 1 × 1 × 1 × 1 × 22C4 = 11,343,090