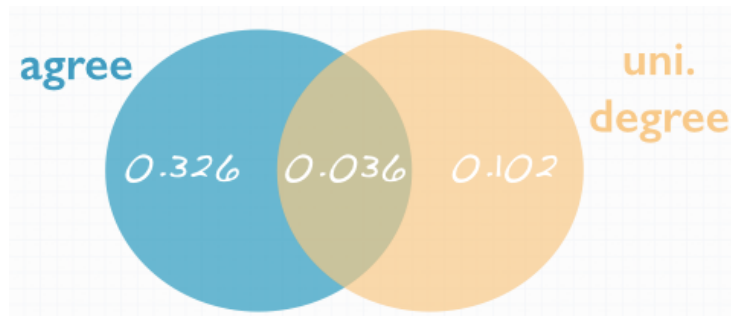**In-Video Quiz Questions for**
Unit 2: Part 1 – (3) Probability examples

(02:55)

1. Given the probabilities below and the accompanying Venn diagram, what percent of the world population have a university degree or higher and disagree with the statement about men having more right to a job than women?

P(agree) = 0.362

P(uni. degree) = 0.138

P(agree & uni. degree) = 0.036

      (a) 1 - 0.138 = 0.862 → 86.2%
      (b) 0.102 → 10.2%
      (c) 0.326 → 32.6%
      (d) 0.362 + 0.138 = 0.5 → 50%

(08:39)

2. Given that 36.2% of the world population agrees with the statement about men having more right to a job than women, what is the probability that in a random sample of 5 randomly selected people all of them agree with the statement?
      (a) $0.362^5 \approx 0.006$
      (b) 0.362 x 5 = 1.81
      (c) 0.362 / 5 = 0.0724

(09:03)

3. Given that 13.8% of the world population have a university degree or higher, what is the probability that in a random sample of 3 people at least one person has a university degree or higher?
   - (a) 1 - 0.138 = 0.862
   - (b) 1 − 0.138^3 = 0.997
   - (c) 1 − (1 − 0.138)^3 ≈ 0.359
   - (d) (1 - 0.138)^3 ≈ 0.641
   - (e) 0.138 x 3 = 0.414

Answers:

1. b

Explanation:

P(uni degree & disagree) = P(uni degree) – P(uni degree & agree)
= 0.138 – 0.036 = 0.102

2. a

Explanation:

P(all 5 agree) = P(1st agrees) x P(2nd agrees) x … x P(5th agrees)
= P(one agrees)^5 = 0.362^5 = 0.005

3. c

Explanation:
P(at least 1 has degree)
= P(1 has degree) + P(2 have degrees) + P(3 have degrees)
= 1 - P(none have degrees)
= 1 - [P(1st doesn't have degree) * P(2nd doesn't have degree) * P(3rd doesn't have degree)]

P(not having degree) = (1 - 0.138), and they're randomly drawn so probabilities are independent of each other for each person. Then,

P(at least 1 has degree) = 1 - [(1 - 0.138)^3] ≈ 0.359