

Questions 1-6 are based on the following:

A healthcare provider undertook a pilot project in order to better understand the linguistic identity of its patients. Patients were asked over the course of a year a set of standardized questions including their mother tongue to assess their linguistic identity.

Below is a table that presents the data collected during the fourth quarter (Q4) of fiscal 2016-2017.

MAIN PATIENT SERVICE	Mother Tongue			Total
	English	French	Other	
CARDIOLOGY	105	113	31	249
GASTRO-ENTEROLOGY	60	43	8	111
GENERAL MEDICINE	449	468	75	992
GYNAECOLOGY	60	57	10	127
OBSTETRICS	329	354	98	781
ORTHOPAEDIC SURGERY	269	170	31	470
PAEDIATRIC MEDICINE	30	14	6	50
OTHER	210	213	31	454
TOTAL	1512	1432	290	3234

Fiscal 2016-2017, Q4 - Pilot Project on Patient Linguistic Identity - Capturing Socio-Demographic Factors for Better Health Planning

Q1. What is the probability that a patient's mother tongue is French or that s/he is coming for Cardiology treatments?

- a) 3.5%
- b) 48.5%
- c) 51.2%
- d) 52.0%
- e) None of the above

Handwritten calculations for Q1:

$$\frac{105 + 113}{3234} = \frac{218}{3234} \approx 6.7\%$$

Q2. What is the probability that a patient is coming for Gynaecology or Obstetrics treatments?

- a) 0.00%
- b) 0.9%
- c) 20.2%
- d) 28.1%
- e) None of the above

Handwritten calculations for Q2:

$$\frac{127 + 781}{3234} = \frac{908}{3234} \approx 28.1\%$$

Q3. Knowing that a patient's mother tongue is English, what is the probability that s/he is coming for Gastro-Enterology treatments?

- a) 1.9%
- b) 4.0%
- c) 7.3%
- d) 39.7%
- e) None of the above

Handwritten calculations for Q3:

$$P(B|A) = \frac{60}{1512} \approx 4.0\%$$

Q4. Given that a patient is visiting the hospital for Orthopaedic Surgery treatments, what is the probability that the patient's mother tongue is French?

- a) 5.3%
- b) 11.9%
- c) 36.2%
- d) 53.6%
- e) None of the above

Handwritten calculations for Q4:

$$\frac{170}{470} \approx 36.2\%$$

Q5. Consider a randomly chosen patient arriving to this hospital, what is the probability that her/his mother tongue is English and that s/he came to the hospital for General Medicine treatments?

- a) 13.9%
- b) 29.7%
- c) 45.3%
- d) 63.5%
- e) None of the above

Handwritten calculations for Q5:

$$\frac{449}{3234} \times \frac{992}{3234} \approx 13.9\%$$