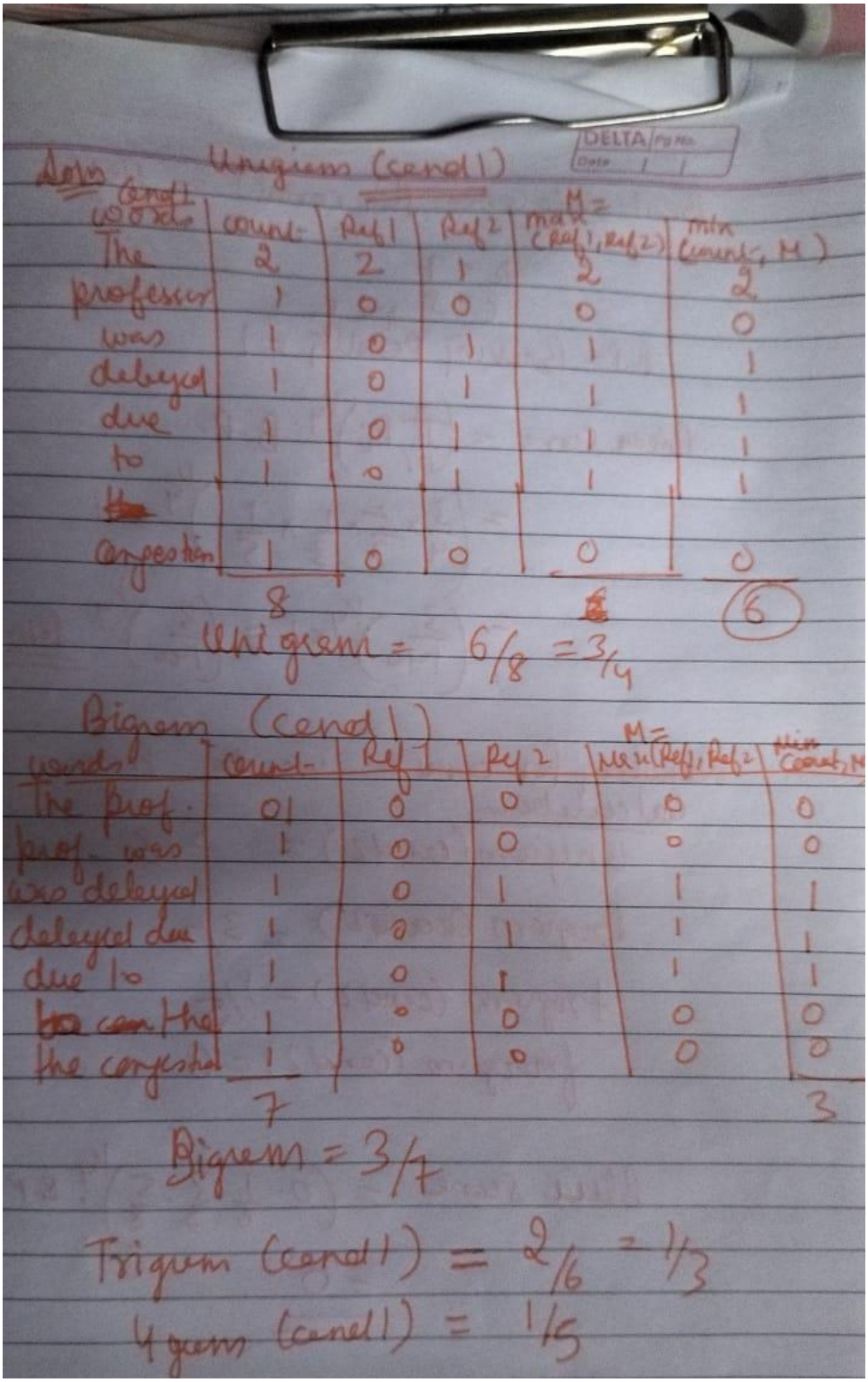
Q1. Compute the BLEU score for the following candidates.

Reference 1: The teacher arrived late because of the traffic

Reference 2: The teacher was delayed due to traffic

Candidate 1: The professor was delayed due to the congestion

Candidate 2: The teacher was held up by the traffic



Best reference for cand1 is Ref2

$r = 7$

$c = 8$ $\quad r < c$

B.P = Brevity Penalty = 1

$$\text{Bleau Score} = \left(\prod_{i=1}^{4} P_i\right)^{1/4} \text{B.P.}$$

$$= \left(\frac{3}{4} \times \frac{5}{7} \times \frac{1}{3} \times \frac{1}{5}\right)^{1/4} \times 1$$

$$= \left(\frac{3}{140}\right)^{1/4} \times 1 = \left(\frac{3}{140}\right)^{1/4}$$ Ans

Similarly for cand2 we do these calculations

Unigram (cand2) = 5/8

Bigram (cand2) = 3/7

trigram (cand2) = 1/5

fourgram (cand2) = 0

$$\text{Bleau Score} = \left(0 \cdot \frac{1}{6} \cdot \frac{3}{7} \cdot \frac{5}{8}\right)^{1/4} \text{B.P}$$

$$= 0$$