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2. Tom's car holds 50 litres of petrol when the fuel tank is full.

For each of 10 journeys, each starting with 50 litres of petrol in the fuel tank, Tom records the distance travelled, d kilometres, and the amount of petrol used, p litres.

The summary statistics for the 10 journeys are given below.

$$\sum d = 1029 \quad \sum p = 50.8 \quad \sum dp = 5240.8 \quad S_{dd} = 344.9 \quad S_{pp} = 0.576$$

(a) Calculate the product moment correlation coefficient between d and p

(3)

The amount of petrol remaining in the fuel tank for each journey, w litres, is recorded.

(b) (i) Write down an equation for w in terms of p

(ii) Hence, write down the value of the product moment correlation coefficient between w and p

(2)

(c) Write down the value of the product moment correlation coefficient between d and w

(1)

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Q2

(Total 6 marks)