MAS Probabilistic Reasoning

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Probabilistic Reasoning: Assignment 3
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1. Question 1

13.10 Show the statement 1 is equivalent to either 2 or 3.

$$P(A,B \mid C) = P(A \mid C)P(B \mid C) \quad (1)$$
$$P(A \mid B,C) = P(A \mid C) \quad (2)$$
$$P(B \mid A,C) = P(B \mid C) \quad (3)$$

$$P(A,B \mid C) = P(A \mid C)P(B \mid C) \quad (1)$$
$$\frac{P(A,B,C)}{P(C)} = P(A \mid C)\frac{P(B,C)}{P(C)} \quad (2)$$
$$\frac{P(A \mid B,C)P(B,C)}{P(C)} = P(A \mid C)\frac{P(B,C)}{P(C)} \quad (3)$$
$$P(A \mid B,C)\frac{P(B,C)}{P(C)} = P(A \mid C)\frac{P(B,C)}{P(C)} \quad (4)$$
$$P(A \mid B,C) = P(A \mid C) \quad (5)$$

2. Question 2

13.20 For the Wumpus world in Chap. 13.7 compute the term $\sum_{other} P(other)$ for the various pit configurations shown on p. 485

$$...todo... \quad (1)$$