Norwegian University of Science
and Technology
Department for Computer Science

Methods in Artificial Intelligence
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Exercise 1

1 **a)**

$$\begin{aligned} P(Siblings \leq 2) &= P(Siblings = 0) + P(Siblings = 1) + P(Siblings = 2) \\ &= 0.15 + 0.49 + 0.27 \\ &= 0.91 \end{aligned}$$

b)

$$\begin{aligned} P(Siblings > 2 | Siblings \geq 1) &= \frac{P(Siblings > 2 \wedge Siblings \geq 1)}{P(Siblings \geq 1)} \\ &= \frac{P(Siblings > 2)}{P(Siblings \geq 1)} \\ &= \frac{1 - P(Siblings \leq 2)}{1 - P(Siblings = 0)} \\ &= \frac{0.09}{0.85} = \frac{9}{85} \approx 0.1059 \end{aligned}$$

c)

d)

2 **a)**

3 **a)**

4 **a)**