We want to find $P(G|R = \text{yes})$, which we can compute using the joint distribution of G and R, evaluated at $R = \text{yes}$, i.e., $P(G, R = \text{yes})$. In particular, we have,

$$P(G|R = \text{yes}) = \frac{P(G, R = \text{yes})}{\sum_{\forall G} P(G, R = \text{yes})}.$$

We compute,

$$P(G, R = \text{yes}) = \sum_{\forall S} \sum_{\forall C} P(G, S, R = \text{yes}, C)$$

$$= \sum_{\forall S} \sum_{\forall C} P(G|S, R = \text{yes}) P(S|C) P(R = \text{yes}|C) P(C)$$

$$= \sum_{\forall S} P(G|S, R = \text{yes}) \underbrace{\sum_{\forall C} P(S|C) P(R = \text{yes}|C)\, P(C)}_{F(S)}$$

$$= \sum_{\forall S} P(G|S, R = \text{yes}) F(S)$$

We first compute F. We have,

$$F(S) = \sum_{\forall C} P(S|C) P(R = \text{yes}|C)\, P(C)$$

$$\begin{aligned} &= 0.5\big(P(S|C = \text{yes}) P(R = \text{yes}|C = \text{yes}) \\ &+ P(S|C = \text{no}) P(R = \text{yes}|C = \text{no})\big) \end{aligned}$$

$$= 0.5(0.8 P(S|C = \text{yes}) + 0.1 P(S|C = \text{no}))$$

$$= \begin{cases} 0.5 \times (0.8 \times 0.1 + 0.1 \times 0.8) = 0.08, S = \text{on} \\ 0.5 \times (0.8 \times 0.9 + 0.2 \times 0.1) = 0.37, S = \text{off} \end{cases}$$

Substituting this back into the joint distribution, we have

$$P(G, R = \text{yes}) = 0.08 \times P(G|S = \text{on}, R = \text{yes}) + 0.37 \times P(G|S = \text{off}, R = \text{yes})$$

$$= \begin{cases} 0.08 \times 0.83 + 0.37 \times 0.06 = 0.0886, G = \text{wet} \\ 0.08 \times 0.15 + 0.37 \times 0.9 = 0.345, G = \text{damp} \\ 0.08 \times 0.02 + 0.37 \times 0.04 = 0.0164, G = \text{dry} \end{cases}$$

$$\therefore P(G = \text{wet}|R = \text{yes}) = \frac{0.0886}{0.0886 + 0.345 + 0.0164} \approx 19.688.$$