

The model Independencies are shown below:

$(UR \perp LB)$
 $(UR \perp OR \mid D)$
 $(UR \perp OR \mid LB, D)$
 $(LB \perp UR)$
 $(LB \perp OR \mid D)$
 $(LB \perp OR \mid UR, D)$
 $(OR \perp UR, LB \mid D)$
 $(OR \perp LB \mid UR, D)$
 $(OR \perp UR \mid LB, D)$

Variable Elimination

Using variable elimination, the probability the battery is low given that Olga reports Jason dropping the ball is 0.1413.

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+-----+-----+
| LB   | phi(LB) |
+=====+=====+
| LB(0) | 0.1413 |
+-----+-----+
| LB(1) | 0.8587 |
+-----+-----+

```

Approximate Inference

The same probability was found using approximate inference, and as the number of samples increased, the result converged to the exact method above.

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| LB | phi(LB) |

+=====+=====+

| LB(0) | 0.1433 |

+-----+-----+

| LB(1) | 0.8567 |

+-----+-----+