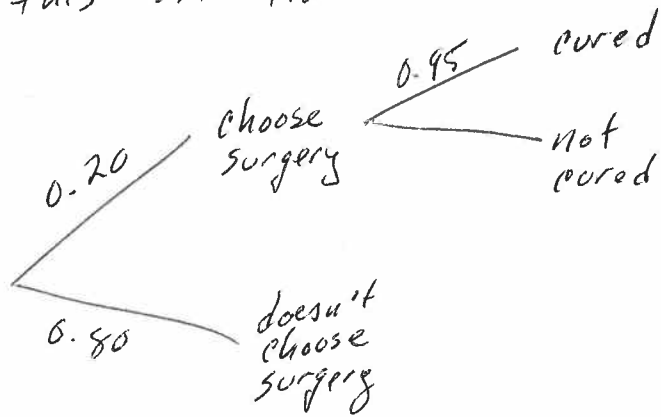


3.72 | I will use a tree diagram to illustrate this situation



So, the probability that a child chooses surgery and is cured is  $0.20 \times 0.95$  or  $0.17$ .

3.80 | Here is how we state our conclusions.

- Given that a fight occurs, the probability the initiator wins is  $0.4063$ .
- Given that no fight occurs, the probability the initiator wins is  $0.7767$ .
- The probability that the initiator wins depends on whether or not a fight occurs; so the events "no fight" and "initiator wins" are not independent.

4.18 | (Posted above.)

4.20 | (Posted above.)

4.22 | (Posted above.)

4.24 | (Posted above.)

4.32 |  $x$  = possible gain

$x$	$p(x)$	$x p(x)$
-1	$\frac{22,999,999}{23,000,000}$	$\approx -0.99999$
6,999,999	$\frac{1}{23,000,000}$	$\approx 0.30435$
		$E(x) \approx -0.70$

The mean loss per play is  $70.$