1	3 points
60	Suppose a university decides to test all of its students for the disorder known as Zoom Brain. It is estimated that 10% of students have this disorder. If a student has Zoom Brain, the test will have a positive result with probability 0.98. If a student does not have Zoom Brain, the test will have a positive result with probability 0.20. If a student has a positive result, what is the probability that the student has Zoom Brain? Please give your answer to 3 decimal places, and as a number, not a percentage.
e man	not diseased + I positive test, and - megative test Bon Bridge
or it	Type your answer $P(+ zB) \times P(zB)$
ge) were	P(+12B)P(2B) + P(+12B6)P(2B6)
^. ₂	3 points = .98 × . 10
- d	Type your answer $P(ZB +) = \frac{P(+ ZB) \times P(ZB)}{P(+ ZB) P(+ ZB)} P(ZB)$ $= \frac{P(+ ZB) P(ZB)}{P(+ ZB) P(+ ZB)} P(ZB)$ 3 points Same situation as the previous question, but now suppose a student has a negative result. What is the probability that the student does not have Zoom Brain? Please give your answer to 3 decimal places, and as a number, not a percentage.
3	Type your answer $P(ZB^c) = P(-1ZB^c) P(ZB^c)$ $P(-1ZB^c) P(ZB^c) + P(-1ZB) P(ZB)$
	$= \frac{(1 - P(+/2B^{c}))P(2B^{c})}{(1 - P(+/2B^{c}))P(2B^{c})} = \frac{80 \times .90}{(1 - P(+/2B^{c}))P(2B^{c})}$
	$P(- ZB^{c})P(ZB^{c}) + P(- ZB)P(ZB)$ $= \frac{(1 - P(+ ZB^{c}))P(ZB^{c})}{(1 - P(+ ZB^{c}))P(ZB^{c})} + \frac{80 \times .90}{(1 - P(+ ZB^{c}))P(ZB^{c})} = \frac{80 \times .90}{(1 - P(+ ZB^{c}))P(ZB^{c})} + \frac{90 \times .90}{(1 - P(+ ZB^{c}))P(ZB^{c})} = \frac{80 \times .90}{$
	Suppose you come across a game at the Hunterdon 4H fair, and you have no idea what the probability of winning is. Your best choice for
	Deta(1,1) bezz(1,1): stle unitum disembiren, using there for a prior describiren, using the form
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	O beta(3,7)
	O beta(70, 30)
	O beta(30,70)
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	best choice for a prior distribution of winning is O beta(1,1) The mean of a beta(a, b) alisabeth is a + b, O beta(7,3) O beta(3,7) O beta(3,7) O beta(70,30) beta(70,30) beta(30,70) O beta(50,50) Deta(50,50)
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