

Charity Fair		Rubric	
		Points	Section points
1.	<p>Gives correct answer: <u>1</u> 16</p> <p>Shows work such as: probability (all red) = $(1/4)^3 = 1/64$ probability (all the same color) = $4 \times (1/64) = 1/16$</p>	1 1	2
2.	<p>Gives correct answer: No and</p> <p>May show that: If 16 people play once, they pay $16 \times 25\text{¢} = \\4 On average, 1 person wins \$5 So the charity loses. ($\\$4 - \\$5 = -\\$1$) Accept alternative correct reasoning</p>	2 ft	2
3.	<p>Suggests changes such as: <i>Change 1</i> Have more colors, say 5. Calculates $\text{prob}(\text{all the same color}) = 5 \times (1/5)^3 = 1/25$ States that if 25 people play once, the charity gains. ($\\$6.25 - \\$5 = \\$1.25$)</p>	1 1 1	3
	<p><i>Change 2</i> Have more barrels, say 4. $\text{prob}(\text{all the same color}) = 4 \times (1/4)^4 = 1/64$ If 64 people play, the charity gains. ($\\$16 - \\$5 = \\$11$)</p>	or 1 1 1	or 3
	<p><i>Change 3</i> Increase the price to 50 cents If 16 people play once, the charity gains. ($\\$8 - \\$5 = \\$3$) Alternatively, decrease the amount won from, say, \$5 to \$3. If 16 people play once, the charity gains. ($\\$4 - \\$3 = \\$1$)</p>	or 1 1 1	or 3
Total Points		max	10