James Dumitru
IIT PSYC 203 LAB
Project 4

1.)

For the red disc, z = (45-33)/8 = 1.5
For the blue disc, z = (45-45)/2 = 0

He should go for the red disk because it has a smaller chance of spinning faster than 45 rpm than the blue disk.

2.)

3.)

For the left tunnel, z = (4-5)/1.25 = -0.80 ---.21186 ---21.19% chance
For the Right tunnel, z = (4-6)/1.75 = -1.14 ---.12714---12.71% chance
There is a higher chance that the left tunnel is 4m long or less than the right one.
He should choose the left

4.)

5.)

		Vanishes	Remains	Total
Stone	Skull	11	24	35
	Heart	15	26	41
	Total	26	50	76

P(vanished|skull) = (vanished skulls)/(skulls) = 11/35=0.31
P(Vanished | heart) = (vanished hearts)/(hearts) = 15/41 = 0.37
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P(A|B) = (P(B|A)P(A)) / P(B)
P(skull) = (skull)/(all stones) = 35/76 = 0.46
P(vanished) = (vanished)/(all stones) = 26/76 = 0.34
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P(skull | vanished) = (vanished skull/vanish) = 11/ 26 = 0.42
P(vanished|skull) = (skull|vanished)(vanished) / (skull) =
(0.42*0.34) / (0.46) =
0.14 / 0.46 = 0.31 (probability skull will vanish)
P(heart) = heart/all stones = 41/76 = 0.54
P(vanished) = vanished / all stones = 26 / 76 = 0.34
P(heart | vanished) = vanished hearts / vanish = 15/26 = 0.58
P(vanished|heart) = (heart|vanished)(vanished) / (heart) =
(0.58*0.34) / (0.54) =
0.20 / 0.54 = 0.37 (probability heart will vanish)

Basically, since both have at least a 30% chance of vanishing, they are both bad to jump on, but the skulls have a less chance of vanishing than the hearts so he should still choose to jump on the skulls.

6.)

7.)

Zach's creativity raw score is 30, and the z was 1.36. If you check the appendix where the standard normal distribution is, it would show the smaller proportion value for our z of 1.36 which is 0.08691 which would be about 8.69% that someone in general has the same or more in creativity.

8.)

9.)

Zach's IQ raw score is 125, and the z was – 0.28, going back to the appendix, since the z is negative, the larger proportion column for the z which was – 0.28. The percent would be 0.61026 about 61%. Meaning, there is a 61% chance that worker is as smart at him with that IQ or more.