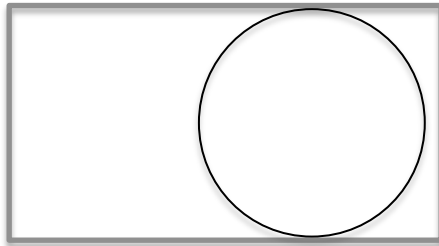


Making a Ghost costume



I've got a plan. I'm going to make a pattern for any size person to use a sheet and a baseball cap to become a ghost this Halloween. I'm going to be rich!

I figure the sheet has to be cut as a circle in order for it to hang low on all sides of my trick-or-treater.



1. How should I decide how large a circle to draw on my sheet? What measurements on the circle and on the trick-or-treater should I use?
2. I don't want to trip any children. So, I think that my costume will have to come near people's feet but give them room to walk easily. Let's say that my costume should be within 12 inches of the ground to look the spookiest but still stay safe. How should I adjust my measurements?

I'm worried about the sheet slipping around and interfering in the little person's ability to see through the eyeholes. I think we should safety pin the sheet to a baseball cap. The kid can wear the hat under the sheet to keep it from slipping around.

I found these sheet measurements online.

| Sheet size | Inches | Centimeters |
|------------|-----------|-------------|
| Twin | 66 x 96 | 167 x 243 |
| Long twin | 66 x 102 | 167 x 259 |
| Full | 81 x 96 | 205 x 243 |
| Queen | 90 x 102 | 228 x 259 |
| King | 108 x 102 | 274 x 259 |

3. How tall are you in inches?

4. What size sheet will you need for your costume? Explain how you came to that size.
5. What size sheets will not work for you? Why?
6. Describe for what size trick-or-treaters my ghost sheet idea will work.
7. For whom will it not work? Explain your reasoning.
8. For each bed sheet size, what is the height of the tallest person that can make a perfectly circular ghost costume using that sheet?
9. In general how do you find the maximum height of a person for each bed sheet?
10. I think that sheets should come in larger sizes for my costume creations. Maybe that's how I can make my fortune. I'll create sheets large enough to cover most people's height.
 - a. What dimensions would a sheet need to be to cover a person who is $5\frac{1}{2}$ feet tall?
 - b. 6 feet tall?
 - c. Any number of inches tall?

Source: <http://interiordec.about.com/od/beds/a/bedsizes.htm>
<http://www.fpnotebook.com/Endo/Exam/HghtMsrmtlnChldrn.htm>