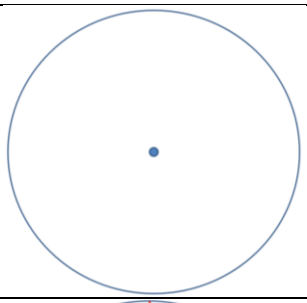
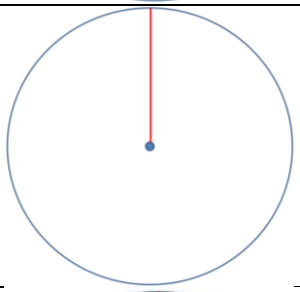
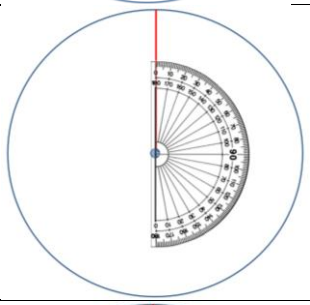
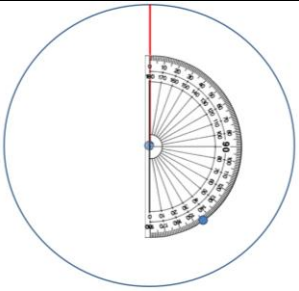
Drawing a pie-chart by hand

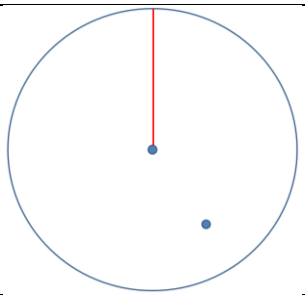
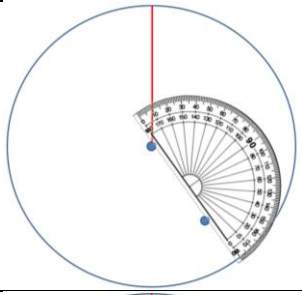
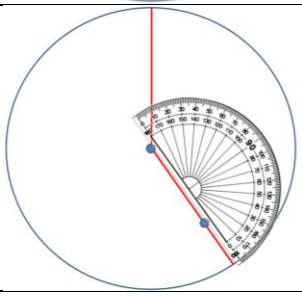
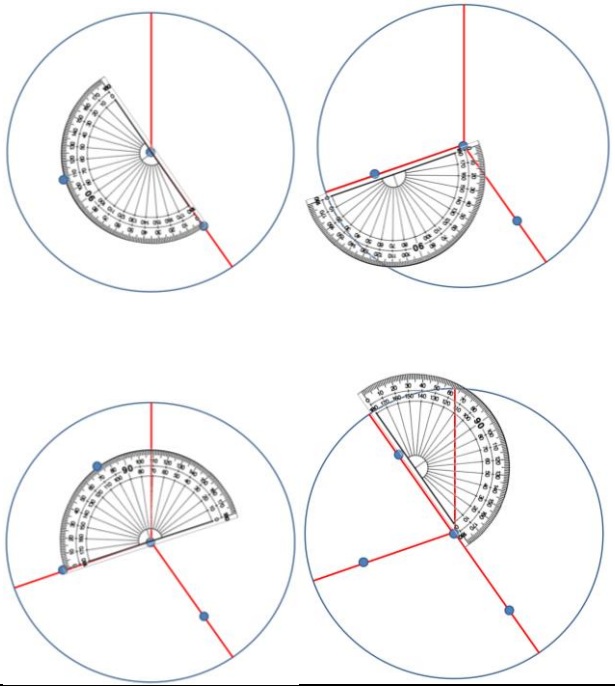
If you want to draw a pie chart manually, you will need to determine the angle (in degrees) for each of the slices. As 360° = 100%, so 3.6° = 1%. We can therefor determine the angle for each slice, by multiplying the percentage (relative frequency) by 3.6. Table 1 shows an example for this.

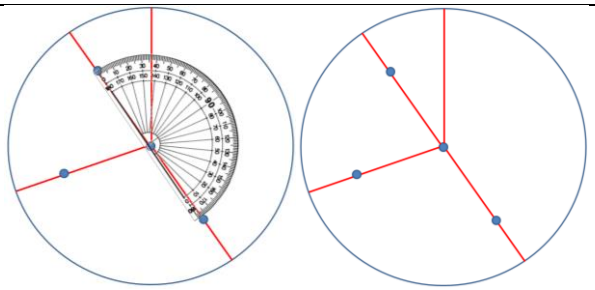
Table 1
Calculation example of degrees for slices

Educational Program	*(absolute) Frequency*	*Relative Frequency (in %)*	*Angle (in degrees)*
Business	4	40%	40 x 3.6 = 144
IT	3	30%	30 x 3.6 = 108
Mathematics	2	20%	20 x 3.6 = 72
Psychology	1	10%	10 x 3.6 = 36
Total	**10**	**100%**	**360**

Then to draw the slices use the following steps:

1. Draw a circle	
2. Draw a straight line from the center of the circle to the edge	
3. Place a protractor at the center and align it with the straight line	
4. Add a dot at the angle	

5. Remove the protractor	
6. Place a ruler at the centre of the circle and the dot from step 4	
7. Draw a straight line from the centre till the edge of the circle that would go through the dot.	
8. Repeat step 3 till 7 until all slices have been created.	

If a the angle is bigger than 180 you can use the opposite direction. For example, an angle of 198 is equal to 180 + 18 degrees, so mark off 18 degrees in the opposite direction.