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Circles AND Arcs

Objective: Find the measures of central angles and arcs.

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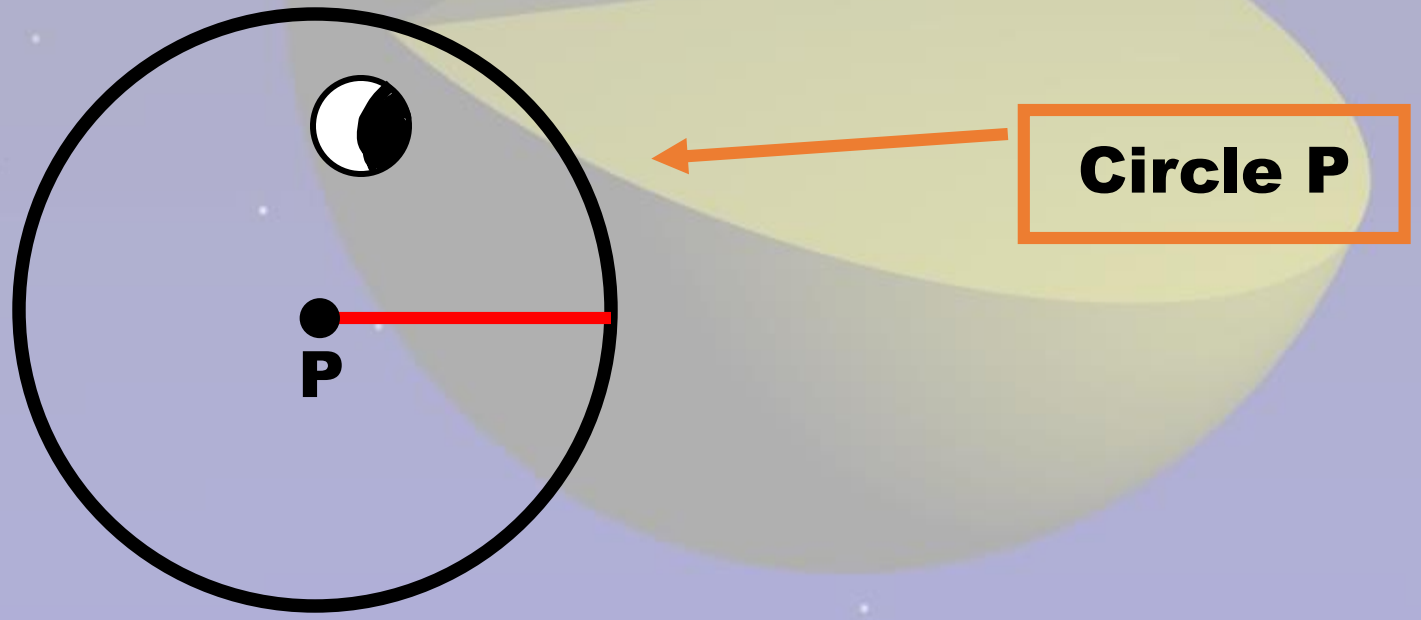
A ***CIRCLE*** is the set of all points equidistant from a given point called the center.

This is circle P for Pacman.



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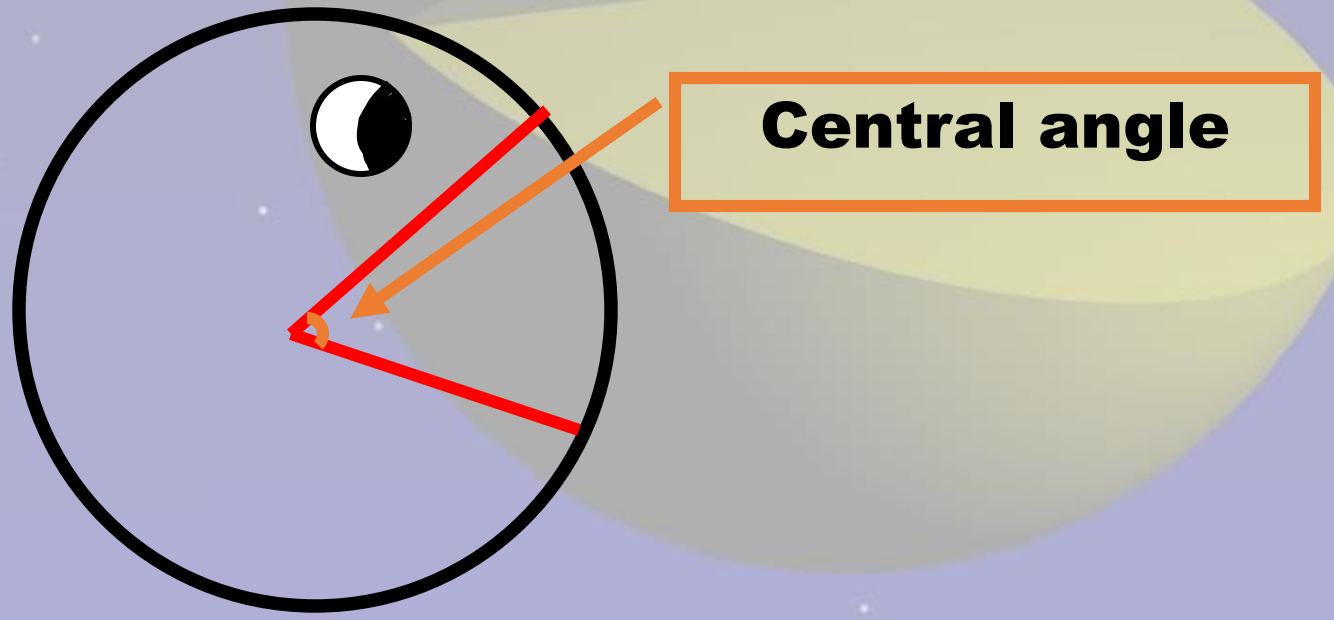
A ***CENTRAL ANGLE*** of a circle is an angle with its vertex at the center of the circle.



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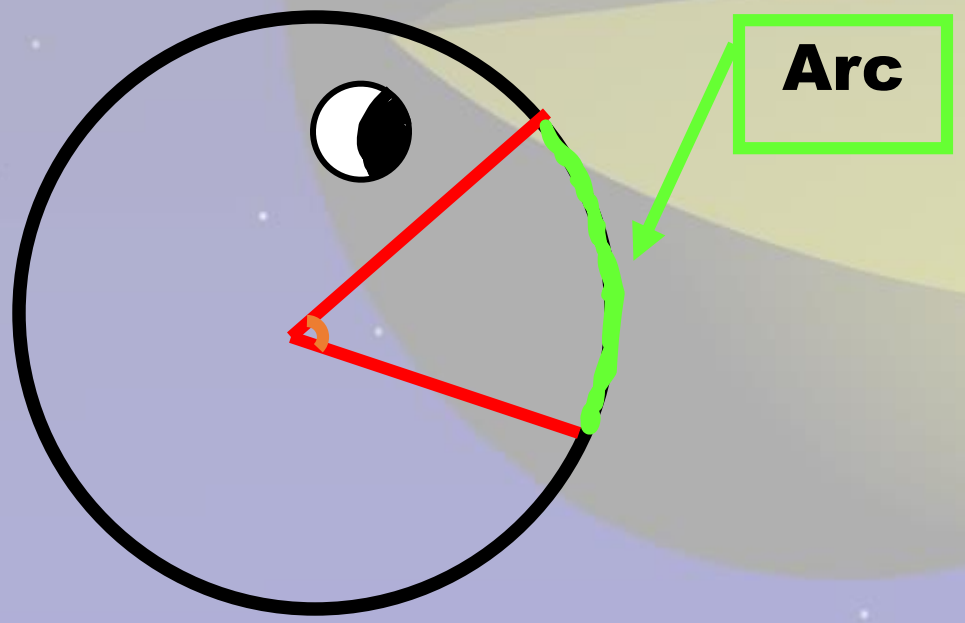
An *arc* is a part of a circle. In this case it is the part Pacman would eat. ☺



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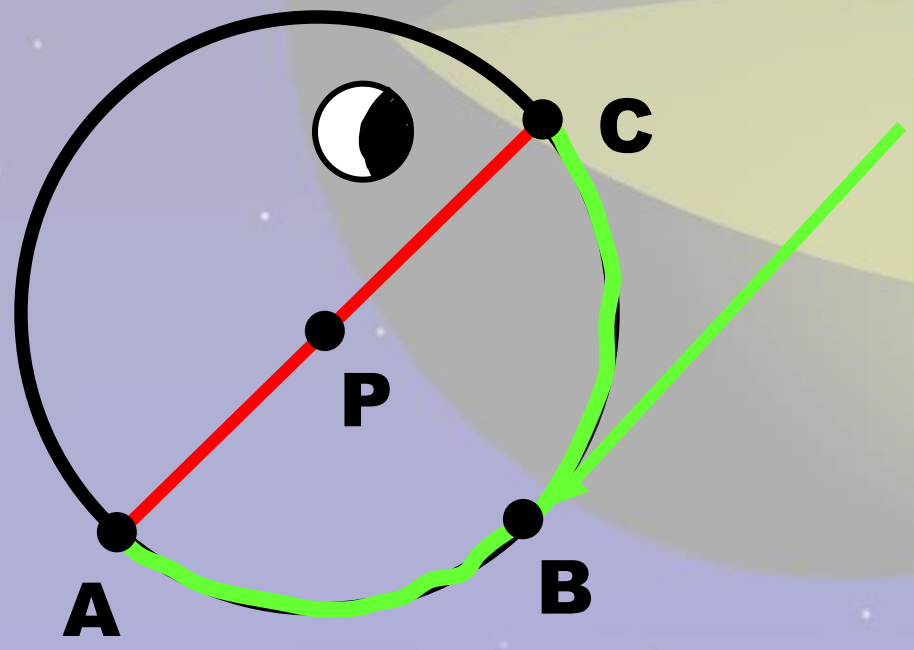
One type of arc, a *semicircle*, is half of a circle.



Semicircle $\overset{\frown}{ABC}$

m $\overset{\frown}{ABC}$ = 180

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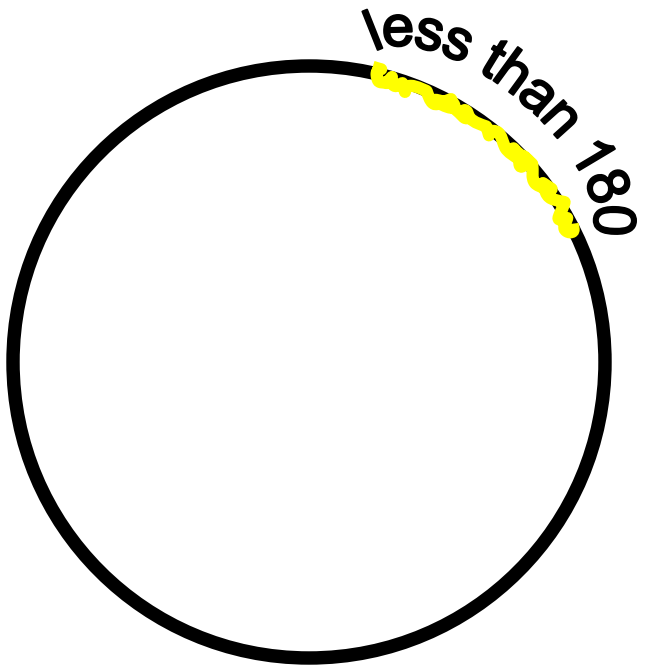
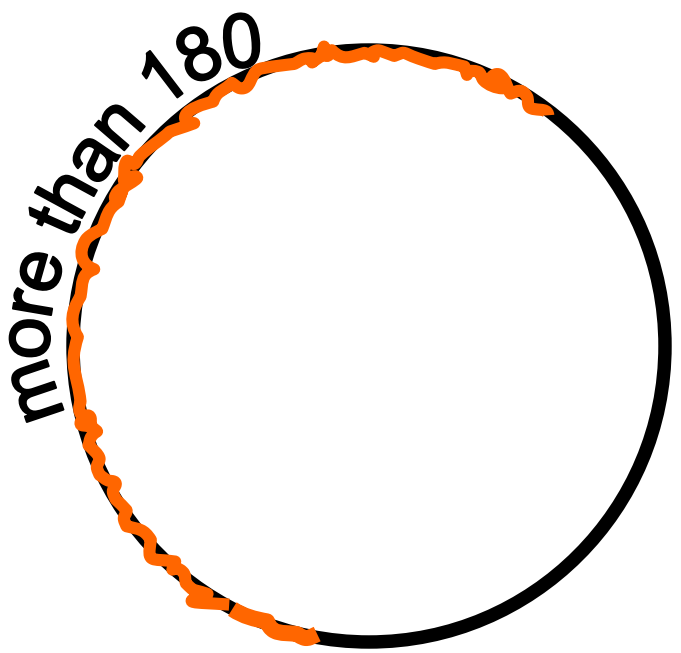
A minor arc is smaller than a semicircle. A major arc is greater than a semicircle.





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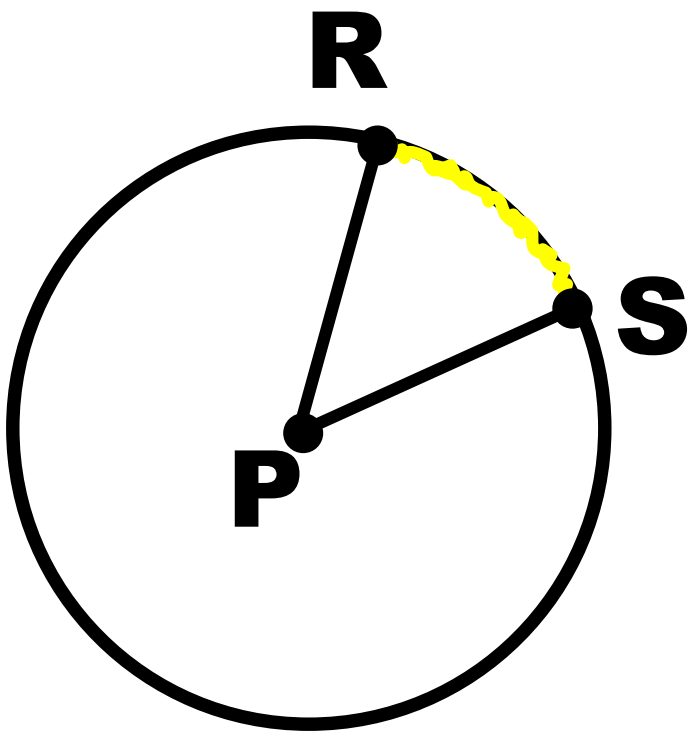
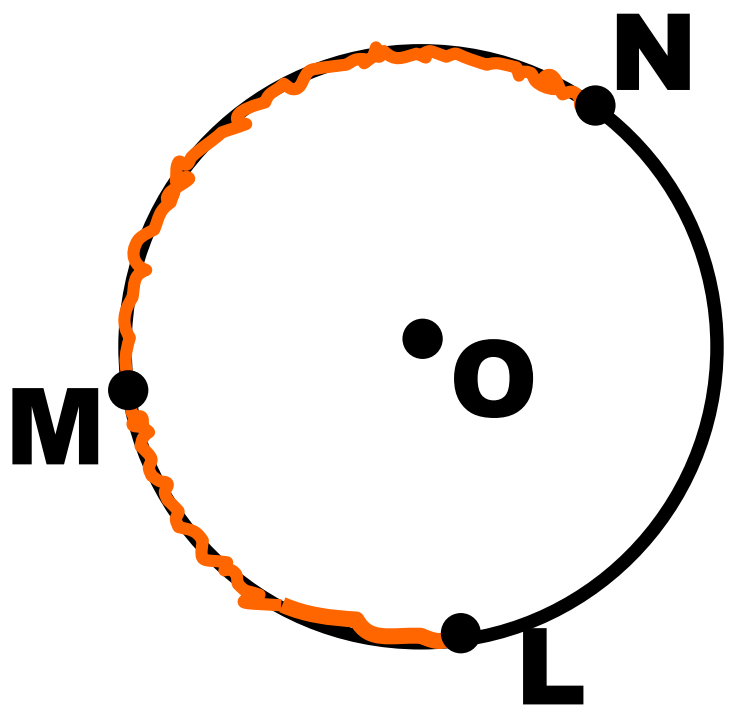
$\overset{\frown}{RS}$ is a minor arc.

$m\overset{\frown}{RS} = m\angle RPS.$



$\overset{\frown}{LMN}$ is a major arc.

$m\overset{\frown}{LMN} = 360 - m\overset{\frown}{LN}$



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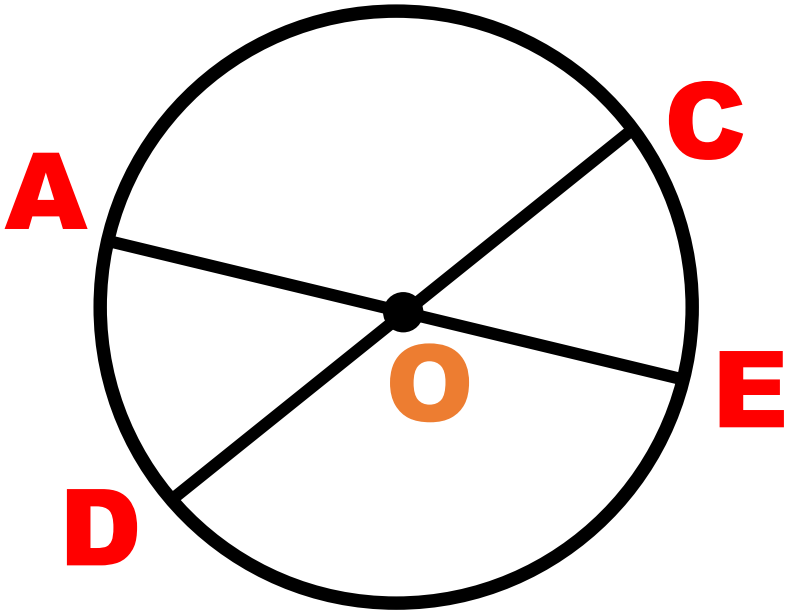
Identify the following in circle O:

1) the minor arcs



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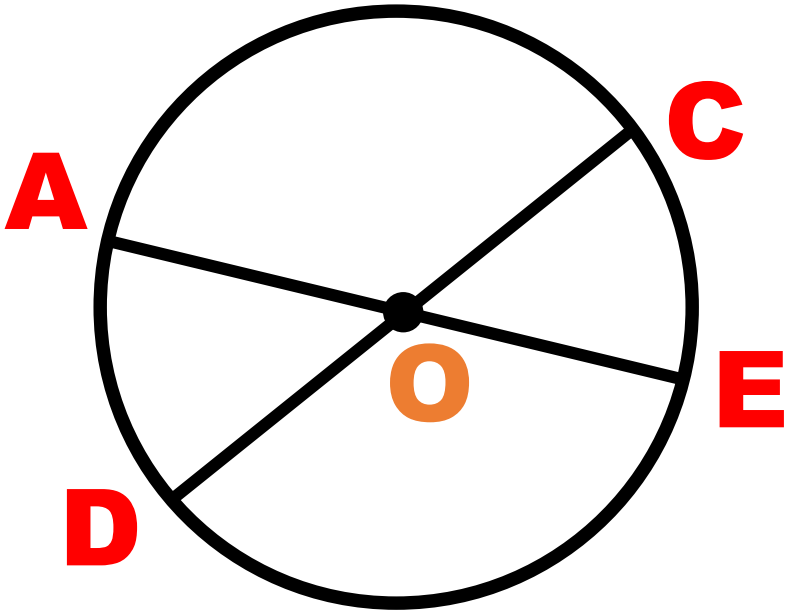
Identify the following in circle O:

2) the semicircles



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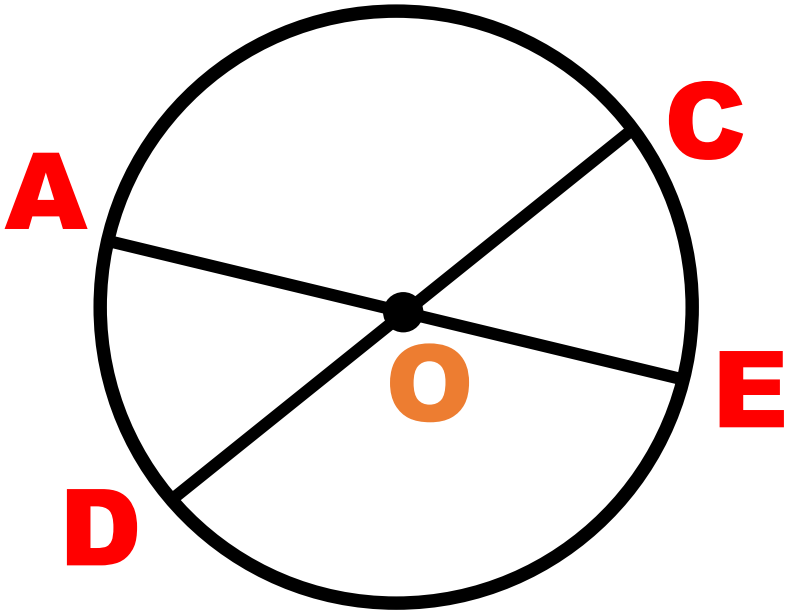
Identify the following in circle O:

3) the major arcs containing point A



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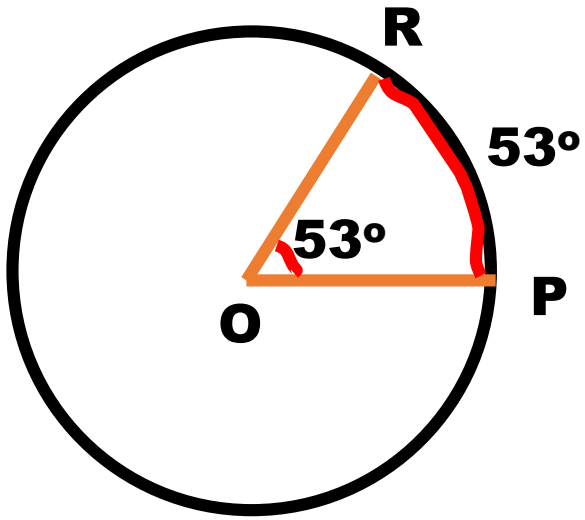
The measure of a central angle is equal to its intercepted arc.



$m\angle ROP = 53°$

$m\overset{\frown}{RP} = 53°$

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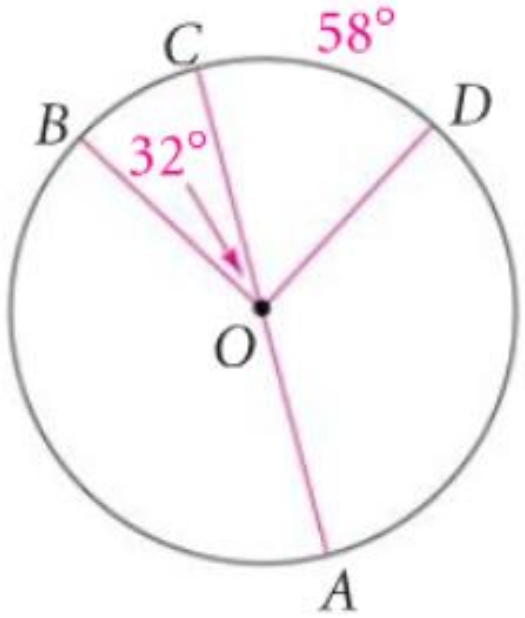
Find the measure of each arc.



1. $\overset{\frown}{BC} = 32$
2. $\overset{\frown}{BD} = 90$
3. $\overset{\frown}{ABC} = 180$
4. $\overset{\frown}{AB} = 148$

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Here is a circle graph that shows how people really spend their time. Find the measure of each central angle in degrees.

1. Sleep $0.31(360) = 112°$
2. Food $0.09(360) = 32°$
3. Work $0.20(360) = 72°$
4. Must Do $0.07(360) = 25°$
5. Entertainment $65°$
6. Other $0.15(360) = 54°$