



PARKSIDE CHRISTIAN ACADEMY

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## Weekly Sheet for HS2 Algebra II

Mr. Charlton

Week # 6      Dates: October 3, 2011 – October 7, 2011

### Topics/Content/Skills:

**Topic:** Conic Sections: The circle

**Content:** This lesson is designed for an Advanced Mathematics class and introduces the first conic section - a circle.

**Skills:** Students will be able to:

- demonstrate knowledge of what a circle is by relating the connection between the distance formula and the definition of a circle, and the equation of a circle.
- construct a circle after being given an equation or characteristics of a circle.
- demonstrate recognition of a circle given its equation or relevant characteristics.

### Vocabulary/Key Terms/Formulas:

**Vocabulary:**

- a. An **absolute value function** has a special characteristic in that the function will not be negative.
- b. A **transformation** changes a graph's size, shape, position, or orientation.
- c. A **translation** is a transformation that shifts a graph horizontally and/or vertically, but does not change its size, shape, or orientation.
- d. A **vertical stretch** occurs when the coefficient of the variable is greater than one.
- e. A **vertical compression** occurs when the coefficient of the variable is less than one.
- f. A **reflection** occurs across the x-axis when the coefficient changes signs from positive to negative or vice versa.
- g. A **circle** is a round plane figure whose boundary (the circumference) consists of points equidistant from a fixed center.

**Key Terms:** All

**Formula:**

- $Abs(x) = y$
- $x^2 + y^2 = r^2$

**Homework:**

	<b><u>Lesson</u></b>	<b><u>Homework</u></b>
<b><u>Monday</u></b>	Review of : <ul style="list-style-type: none"><li>• The distance formula</li><li>• The three types of graphs displayed in class to date.</li></ul>	Student will: <ul style="list-style-type: none"><li>• Review the link on Khan academy (<a href="http://www.khanacademy.org/video/absolute-value-equations-1?playlist=Algebra%20I%20Worked%20Examples">http://www.khanacademy.org/video/absolute-value-equations-1?playlist=Algebra%20I%20Worked%20Examples</a>)</li></ul>
<b><u>Tuesday</u></b>	Lesson: <ul style="list-style-type: none"><li>• Finding the center of a circle given the endpoints, or general equation.</li></ul>	Student will: <ul style="list-style-type: none"><li>• Complete handout given in class</li></ul>
<b><u>Wednesday</u></b>	1. Quiz 2. Real world applications of circles.	Student will: <ul style="list-style-type: none"><li>• Review the link on Khan academy <a href="http://www.khanacademy.org/video/linear-equations-in-slope-intercept-form?playlist=ck12.org+Algebra+1+E">http://www.khanacademy.org/video/linear-equations-in-slope-intercept-form?playlist=ck12.org+Algebra+1+E</a></li><li>• Complete handout given in class</li><li>• Complete take home quiz</li></ul>
<b><u>Thursday</u></b>	Graphing circular functions.	Students will: <ul style="list-style-type: none"><li>• Complete worksheet given out in class</li></ul>
<b><u>Friday</u></b>	All school field trip	Students will: <ul style="list-style-type: none"><li>• Not have homework.</li></ul>

**Tests:**

Quiz on circles.

**Special Events/News:**

Topsfield Fair Field Trip – October 7, 2011

**Extra-ordinaries/Mastery Review Material:**

**Answer the Following:**

- $Y^2+X^2=9$
- $Y^2+X^2=16$
- $Y^2+X^2=25$
- $Y^2+X^2=36$
- $Y^2+X^2=49$

What is the radius of the circles on the left?

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Equation of Circle in Standard Form

- $(y-3)^2+(x-1)^2=9$
- $(y-5)^2+(x-14)^2=16$
- $(y-1)^2+(x-5)^2=25$
- $(x+2)^2+(y-12)^2=36$
- $(y+7)^2+(x+5)^2=49$
- $(x+8)^2+(y+17)^2=49$

What is the center and radius of each circle to the left?