



PARKSIDE CHRISTIAN ACADEMY

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Weekly Sheet for HS-2 Algebra II

Mr. Charlton

Week # 7 Dates: October 10, 2011 – October 14, 2011

Topics/Content/Skills:

Topic: Conic Sections: The parabola

Content:

This lesson is designed for an Advanced Mathematics class and introduces the second conic section – the parabola.

Skills: Students will be able to:

- determine whether a parabola opens upward or downward
- identify the axis of symmetry
- graph a parabola on a graph or graphing calculator.

Vocabulary/Key Terms/Formulas:

Vocabulary:

- An **absolute value function** has a special characteristic in that the function will not be negative.
- A **transformation** changes a graph's size, shape, position, or orientation.
- A **translation** is a transformation that shifts a graph horizontally and/or vertically, but does not change its size, shape, or orientation.
- A **vertical stretch** occurs when the coefficient of the variable is greater than one.
- A **vertical compression** occurs when the coefficient of the variable is less than one.
- A **reflection** occurs across the x-axis when the coefficient changes signs from positive to negative or vice versa.
- A **Circle** is a round plane figure whose boundary (the circumference) consists of points equidistant from a fixed center.
- A **Parabola** is a conic section, the intersection of a right circular conical surface and a plane parallel to a generating straight line of that surface.

Key Terms: All

Formula:

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

Homework:

	<u>Lesson</u>	<u>Homework</u>
<u>Monday</u>	NO SCHOOL- COLUMBUS DAY	NO SCHOOL- COLUMBUS DAY
<u>Tuesday</u>	Review of: <ul style="list-style-type: none">• The Circle• Four types of graphs displayed in class to date. Lesson: <ul style="list-style-type: none">• What is a parabola, and how does it relate to the quadratic equation? Part one.	Student will: <ul style="list-style-type: none">• Complete handout given in class• Review the link on Khan academy (http://www.khanacademy.org/video/parabola-focus-and-directrix-1?playlist=Algebra)• Print outs of parabola PowerPoint presentation
<u>Wednesday</u>	Lesson: <ul style="list-style-type: none">• What is a parabola, and how does it relate to the quadratic equation? Part two.	Student will: <ul style="list-style-type: none">• Review the link on Khan academy http://www.khanacademy.org/video/linear-equations-in-slope-intercept-form?playlist=ck12.org+Algebra+1+E• Complete handout given in class• Complete take home quiz
<u>Thursday</u>	Lesson: <ul style="list-style-type: none">• What is a parabola, and how does it relate to the quadratic equation? Part one.	Students will: <ul style="list-style-type: none">• Complete worksheet given out in class• Review the link http://www.khanacademy.org/video/parabola-focus-and-directrix-1?playlist=Algebra
<u>Friday</u>	Lesson: <ul style="list-style-type: none">• What is a parabola, and how does it relate to the quadratic equation? Part two.	Students will: <ul style="list-style-type: none">• Complete take home assignment.

Tests:

NA

Special Events/News:

NA

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? •

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?