TOPIC/OBJECTIVE: Chapter 8 & 9

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CLASS/PERIOD: 1
DATE: 5-1-12

ESSENTIAL QUESTION: Write a summary of Night in 6 sentences.

<table>
<thead>
<tr>
<th>QUESTIONS:</th>
<th>NOTES:</th>
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<tbody>
<tr>
<td>What happened in Chapter 8?</td>
<td>Elie's father were very sick and have dysentery. So Elie take his father to the doctor but the doctor can't help him because he will die. One day Elie's father got beaten by some Jews and the food were taken away. Elie's father ask Elie to give him water. Then a SS Officer told Elie's father to be quiet but he can't hear so the SS Officer shot Elie's father in the head with his gun.</td>
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<td>What happened in Chapter 9?</td>
<td>The next day Elie spent his day with silence without his father. Hitler was going to make his promise to kill the Jews so the SS Officer gather the Jews and about to kill but then a group of Jews called the Resistance movement fought back and chase the SS officer away. Then after that the U.S and Russian Armies arrive.</td>
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SUMMARY: Today I learned about what happen in Chapter 8 & 9 of Night. In Chapter 8, Elie's father is very sick and die and in Chapter 9, the Resistance movement fought back and the U.S and Russian Armies arrive.
ESSENTIAL QUESTION: How many countries are in Europe?

QUESTIONS:
- What is national Identity?
- What is a ghetto?
- What is a Collective Farm?
- What is privatization?
- What is the Holocaust?

NOTES:
- National Identity: The person's identity and sense of belonging to one state or nation.
- Ghetto: A part of a city occupied by a particular group, because of social or economic issues or they have been force to live there.
- Collective Farm: A farm, or a number of farms organized as a unit.
- Privatization: The incidence or process of transferring ownership of a business.
- The massive destruction of 6 million Jews.

SUMMARY: Today I learned about Vocabulary for Europe like national Identity, Ghetto, Holocaust, Collective Farm and privatization.
**ESSENTIAL QUESTION:** Is there more water on the Earth after it rains?

**QUESTIONS:**
- What is evaporation?
- What is condensation?
- What is precipitation?
- What is water vapor?
- What is the water cycle?

**NOTES:**
- *Evaporation:* The process by which water molecules in liquid water escape into the air as water vapor. 
  water - vapor
- *Condensation:* The process by which molecules of water vapor in the air become liquid water. 
  vapor - water
- *Precipitation:* Any form of water that falls from clouds and reach the Earth's surface.
- *Water Vapor:* Water in the form of gas.

**SUMMARY:** Today I learned about the water cycle like evaporation, condensation, precipitation, and water vapor.
**TOPIC/OBJECTIVE:** Solving quadratic equations by factoring

**ESSENTIAL QUESTION:** How do we solving quadratic equation by factoring?

<table>
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<th>QUESTIONS: How are quadratic equations solved by factoring?</th>
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| 1. Factor the quadratic equation
\[ 0 = ax^2 + bx + c \]
\[ ax^2 + bx + c = ( + ) ( + ) \]
\[ ax^2 + bx + c = ( - ) ( - ) \]
\[ ax^2 + bx - c = ( + ) ( - ) \]
\[ ax^2 - bx - c = ( - ) ( + ) \] |
| 2. Use the Zero product property |
| 3. Solve for X |

Ex: \[ x^2 + 2x - 8 = 0 \]
\[ (x - 2)(x + 4) = 0 \]
\[ x = 0 \text{ or } x = -4 \]

**SUMMARY:** Today I learned about solving quadratic equations by factoring like first factor the quadratic equation, second use the Zero product property and last solve for X.
ESSENTIAL QUESTION: How do we solve quadratic equation?

QUESTIONS:
- What are quadratic equation and function?

NOTES:
- quadratic function: \[ y = ax^2 + bx + c \]
- quadratic equation: \[ 0 = ax^2 + bx + c \]

1. Write the quadratic equation
   - \[ 0 = ax^2 + bx + c \] as a quadratic function \[ y = ax^2 + bx + c \].
2. Graph the function
3. The zeroes of the graph are the solution to the quadratic equation.

Ex: \[ 0 = x^2 + 8x + 16 \]

\[ y = x^2 + 8x + 16 \]

\[ \frac{-b}{2a} = \frac{-8}{2} = -4 \]

\[ y = 16 - 32 + 16 = 0 \]

\[ (-4, 0) \]

\[ x = -4 \]

SUMMARY: Today I learned about solving quadratic equation. Write the quadratic equation, graph the function, and the zeroes of the graph are the solution to the quadratic equation.
**ESSENTIAL QUESTION:** How do I graph a square root function?

**QUESTIONS:**
- What is a Square root function?

**NOTES:**

A square root function is a function whose rule contains a variable under a square root sign. \( y = \sqrt{x} \)

\[ \text{Ex: } y = \sqrt{8}x \]

\[ = 8\sqrt{4} \]

\[ = 8 \]

1) Set the expression under the radical sign greater than or equal to 0.

2) Solve for \( x \)

\[ \text{Ex: } y = \sqrt{x+4} = 3 \]

\[ x+4 \geq 0 \]

\[ -4 \]

\[ x \geq -4 \]

**How do I graph a square root function?**

1) Find the domain

2) Make a t-chart using \( x \)-values that are in the domain.

3) Plot the points and draw the curve.

**Ex: \( f(x) = \sqrt{2x+3} \)**

\[ 2x \geq 0 \]

**SUMMARY:**

Today I learned about determining the domain of square root function. Like set the expression under the radical sign greater than or equal to 0 and solve \( x \). To graph a square root function, you find the domain, make a t-chart and plot the points and draw the curve.
ESSENTIAL QUESTION:
What is a Discriminant?

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| How can you tell how many solutions a quadratic has? | $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Discriminant $= b^2 - 4ac$

- Positive: 2 solutions
- Zero: 1 solution
- Negative: No solution

Example:
$3x^2 + 10x + 2 = 0$

$a = 3$, $b = 10$, $c = 2$

$b^2 - 4ac = 100 - 24 = 76$

How can you find the solutions?

1. Put the equation in standard form
2. Use the Quadratic Formula

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

SUMMARY: Today I learned about Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ and first you put the equation in standard form then use the formula to solve it.
**ESSENTIAL QUESTION:** How do I solve quadratics if \( b = 0 \)?

**QUESTIONS:**

<table>
<thead>
<tr>
<th>When do you solve quadratics using square roots?</th>
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**NOTES:**

When the equation is \( y = ax^2 + c \), and the square root method works when "\( x \)" term is missing.

\[
x^2 - 49 = 0 \\
x^2 - 5x + 6 = 0
\]

Square roots of a number have two answers: one is positive & one is negative.

\[\sqrt{49} = \pm 7\]

Cannot take the square root of a negative number.

\[\sqrt{x^2} = \sqrt{-49}\]

\[x = \text{No Solution}\]

Square root of a fraction:

\[\sqrt{\frac{81}{144}} = \pm \frac{3}{4}\]

**SUMMARY:** Today I learned about using square root to solve quadratics. The square root method works when "\( x \)" term is missing, and square root of a fraction is the square root of the numerator and denominator.