## Algebra 1 SOL Review Session

Day: 5 Topics: Linear Systems of Equations (A. 4 d, e) and Inequalities (A. 5 d), and Quadratic Equations (A. 4 b)

## Key Concepts:

- The types of solutions possible for systems and quadratic equations.
- Using Desmos to help determine the solutions of linear systems and quadratic equations.


## Guided Practice:

Systems and Quadratic Equations (Handout)

## Independent Practice

$\left.\begin{array}{|l|l|}\hline \begin{array}{l}\text { 1. What is the solution to this system of equations? } \\ \left\{\begin{array}{l}2 x+4 y=22 \\ 7 x+y=12\end{array}\right.\end{array} & \begin{array}{l}\text { 2. What is the } y \text {-value of the solution to this systems of } \\ \text { equations? } \\ 3 x+y=2\end{array} \\ x+3 y=-18\end{array}\right\}$

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| 9. Solve the equation $x^{2}-2 x-3=0$. | 10. What are the solutions to the equation $-12 x-9=4 x^{2}$ ? |
| :--- | :--- |
| 11. Find the solutions of $2-x^{2}=-x$. | 12. How many solutions does the equation $x^{2}-9=-5 x$ <br> have? |

More Independent Practice (Multiple Choice)
Look at the system of equations.

$$
\left\{\begin{array}{l}
y=-x+2 \\
7 x+4 y=-1
\end{array}\right.
$$

What is the value of $x$ for the solution to this system of equations?
A. -5
B. -3
C. 3
D. 5
A. $\left\{\begin{array}{l}x+y<-2 \\ 2 x-3 y<-9\end{array}\right.$
B. $\left\{\begin{array}{l}x+y<-2 \\ 2 x-3 y \leq-9\end{array}\right.$
C. $\left\{\begin{array}{l}x+y \leq-2 \\ 2 x-3 y<-9\end{array}\right.$
D. $\left\{\begin{array}{l}x+y \leq-2 \\ 2 x-3 y \leq-9\end{array}\right.$

A total of 243 adults and children are at a movie
What values of $x$ are solutions of $3 x^{2}+11 x=20$ ? theater. There are 109 more adults than children in the theater. If $a$ represents the number of adults and $b$ represents the number of children, which system of equations could be used to find the number of adults and the number of children in the theater?
A. $\left\{\begin{array}{l}a+b=243 \\ a=109 b\end{array}\right.$
B. $\left\{\begin{array}{l}a+b=243 \\ b=109 a\end{array}\right.$
C. $\left\{\begin{array}{l}a+b=243 \\ a=b+109\end{array}\right.$
D. $\left\{\begin{array}{l}a+b=243 \\ b=a+109\end{array}\right.$
A. $-\frac{4}{3}$ and 5
B. $-\frac{5}{3}$ and 4
C. -4 and $\frac{5}{3}$
D. -5 and $\frac{4}{3}$

Which equation(s) have only one real solution? Select all that apply.

The equation $a x^{2}+b x+c=0$ has no real solutions. Which statement about the graph of $f(x)=a x^{2}+b x+c$ could be true?
A. $x^{2}+6 x+7=6 x+7$
B. $7 x^{2}=5$
C. $3 x^{2}+x-5=x+5$
D. $3 x^{2}+2 x=2 x$
A. It could pass through the origin.
B. Its vertex could be at $(-6,0)$.
C. It could have a
D. It could have a maximum at $(-3,2)$. minimum at $(0,4)$.

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