Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.4.15

1. What is the slope of the line that passes through the points (4, 5) and (–6, 0)? Think $\frac{y\_{2}-y\_{1}}{x\_{2}-x\_{1}}=m$ .
2. What is the y-intercept of the line that passes through the points (4, 5) and (–6, 0)? Think $y = mx + b$.
3. Solve the system of equations: $\left\{\begin{array}{c}y=-x-3\\y=3x+1\end{array}\right.$ (Show work in notebook if you don’t have room.)

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*Objectives*

**CCSS.Math.Content.8.F.A.2**  Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change*.

**Common Core State Standards for Mathematical Practice (SMP)**

 1. *Make sense of problems and persevere in solving them*.

 2. *Look for and make use of structure* (e.g. understanding that *f(x) = 5x – 9* is *f( ) = 5( ) – 9,* or *the*

 *output is 9 less than the product of 5 and the input*)

*Lesson Plan*

|  |  |
| --- | --- |
| *Mins* | *Task* |
| 98 – 96 | Introduction |
| 96 – 90 | Individual work time: bell ringer |
| 90 – 80 | Discuss bell ringer with partner and then as whole class |
| 80 – 75 | Setting stage for Two Balloons (expectations + objectives) |
| 75 – 60 | Individual work time: Two Balloons, parts 1 – 5  |
| 60 - 55  | Whole class: questions/clarifications on parts 1 – 5  |
| 55 – 30  | Group work time: check answers to 1 – 5 and work through 6 and 7 at own pace  |
| 30 – 20 | Whole class: making connections among numerical, geometric and algebraic viewpoints (parts 1 – 7) |
| 20 – 3 | Group work time: parts 8, 9 |
| 3 – 0  | Debrief lesson + assign homework |

*Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , linear graphs, by Steve Starr; modified by me, 1.23.2012, 3.4.15*

*Two Balloons*

*Two balloons, rising at different constant rates, are released into the sky at different times. Answer the questions below, showing all necessary* ***algebraic*** *steps for credit.*

*This graph shows the height of two balloons as a function of time*

*2*

*1*

*0*

*2000*

*1600*

*1200*

*800*

*400*

*0*

Height (feet)

Time (min)

Balloon B

Balloon A

*1. How fast was Balloon A rising during the time shown?*

*Write your final answer in a sentence with units. (Hint: Think slope.)*

*2. How fast was Balloon B rising during the time shown?*

*Write your final answer in a sentence with units.*

*3. Complete the table showing the height of each balloon as a function of time, assuming each balloon continues to rise at a constant rate.*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Time* *(in minutes)* | *0* | *1* | *2* | *3* | *4* | *5* | *6* | *7* |
| *Height of**Balloon A (feet)* | *800* | *1400* | *2000* | *2600* | *3200* | *3800* | *4400* | *5000* |
| *Height of**Balloon B (feet)* |  | *400* | *1600* | *2800* | *4000* | *5200* | *6400* | *7600* |

*4. Write an equation for Balloon A. What was the height of Balloon A after 1 minute, 10 seconds? (How do you write 10 seconds as a fraction of a whole minute? Be careful.)*

*5. Write an equation for Balloon B. What was the height of Balloon B after 1 minute, 10 seconds?*

*6. When did Balloon B leave the ground? Use the equation from #5.*

*2*

*1*

*0*

*2000*

*1600*

*1200*

*800*

*400*

*0*

Height (feet)

Time (min)

Balloon B

Balloon A

*7a. Assuming that the balloons continue to rise at the same rate, when will Balloon B be at the same height as balloon A?*

*7b. The two balloons are at the same height when they are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ feet in the air.*

*7c. Write a sentence explaining your answers to parts 7a and 7b. What does your answer mean? Use the words ‘minutes’ and ‘feet’ in your explanation.*

*8. When* was *Balloon A at twice the height of Balloon B?*

*\*9. When* will *Balloon B be at twice the height of Balloon A?*

3rd period

Destiny

Nayeli

Maria

Gustavo

Jared

Steven

Wendy

Cynthia C

Vanessa

Bryan

Esmeralda

Quavion

David

Bianca

Lizbeth

Diana

Naomi

Jacqueline

Cynthia Silva

Alex

Tasmiyah

Giselle

Uriel

Israel

Yuliana

Amina

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.5.15

 Solve the system of equations: $\left\{\begin{array}{c}y=4x+10\\y=-3x-11\end{array}\right.$

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.5.15

 Solve the system of equations: $\left\{\begin{array}{c}y=4x+10\\y=-3x-11\end{array}\right.$

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Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.5.15

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Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.6.15

 Solve the system of equations: $\left\{\begin{array}{c}6x+2y=127.92\\3x+8y=133.89\end{array}\right.$

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.6.15

 Solve the system of equations: $\left\{\begin{array}{c}6x+2y=127.92\\3x+8y=133.89\end{array}\right.$

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.6.15

 Solve the system of equations: $\left\{\begin{array}{c}6x+2y=127.92\\3x+8y=133.89\end{array}\right.$

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.6.15

 Solve the system of equations: $\left\{\begin{array}{c}6x+2y=127.92\\3x+8y=133.89\end{array}\right.$

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Bell Ringer for 3.6.15

 Solve the system of equations: $\left\{\begin{array}{c}6x+2y=127.92\\3x+8y=133.89\end{array}\right.$