**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_**

**CC Algebra**

**GRADED REVIEW ASSIGNMENT # 2 – DUE APRIL 18, 2016**

**Show work for all questions for full credit & write your answers on the lines provided!!!**

(*If you feel no work is needed you must explain your reasoning.)*

1. The table below shows the average diameter of a pupil in a person’s eye as he or she grown older.



What is the average rate of change, in millimeters per year, of a person’s pupil diameter from age 20 to age 80?

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1. If $f\left(x\right)=\frac{\sqrt{2x+3}}{6x-5}$, then $f\left(\frac{1}{2}\right)$=

1. When solving the equation 4(3x2 + 2) – 9 = 8x2 + 7, Emily wrote 4(3x2 + 2) = 8x2 + 16 as her first step. State what property justifies Emily’s first step? Justify your answer

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1. Simplify the following expression 3(x – 2)2 – 2(x – 1).

1. To watch a varsity basketball game, spectators must buy a ticket at the door. The cost of an adult ticket is $3 and the cost of a student ticket is $1.50. If the number of adult tickets sold is represented by a and the student tickets sold by s, write an expression that represents the amount of money collected at the door from the ticket sales. Justify your answer.

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1. Sam and Jeremy have ages that are consecutive odd integers. The product if their ages is 783. How old is Jeremy if he is the younger man? Only an algebraic solution is acceptable.

***Jeremy’s age \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

1. Solve and Check $\frac{7}{3}\left(x+\frac{9}{28}\right)=20$

 CHECK

1. State the value of the x and y intercepts for the graph 4x – 5y = 40

***x-intercept\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ y-intercept \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

1. Edith babysits for x hours a week after school at a job that pays $4 an hour. She has accepted a job that pays $8 an

 hour as a library assistant working y hours a week. She will work both jobs. She is able to work *no more than* 15

 hours a week, due to school commitments. Edith wants to earn *at least* $80 a week, working a combination of both

 jobs.

***Part A***

Write a system of inequalities that can be used to represent the situation. ***Show your work.***

***Inequality 1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Inequality 2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Part B***

Graph these inequalities on the set of axes below.

***Part C***

Determine and state one combination of hours that will allow Edith to earn at least $80 per week while working

 *no more than* 15 hours.

 ***Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

1. An application developer released a new app to be downloaded. The table below gives the number of downloads for the first four weeks after the launch of the app.



***Part A***

Write an exponential equation that models these data

 ***Equation \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Part B***

Use this model to predict how many downloads the developer would expect in the 26th week if this trend continues (Round your answer to the nearest download.)

 ***Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_***

***Part C***

Would it be reasonable to use this model to predict the number of downloads past one year?

 ***Explain your reasoning***

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