

## Sum up the News – October, 19<sup>th</sup>, 2015

### Vocabulary

1. If the numbers in a sequence are separated by a common difference of  $\frac{3}{2}$ , which of the following recursive routines could describe the pattern?

- A.  $A_n = A_{2n} - 3$
- B.  $A_n = A_{n-2} + 3$
- C.  $A_n = A_{n-1} + 1.5$
- D.  $A_n = A_{n-1} - 1.5$

2. If a linear equation with an x-intercept of -4 and a positive slope will never pass through which of the quadrants of the graph?

- A. Quadrant I
- B. Quadrant II
- C. Quadrant III
- D. Quadrant IV

3.  $\overrightarrow{JK}$  and  $\overrightarrow{LM}$  are perpendicular. The slope of  $\overrightarrow{JK}$  is 4. If  $\overrightarrow{NO}$  has a slope of -0.25, then which of the following statements are true?

- A.  $\overrightarrow{JK}$  and  $\overrightarrow{NO}$  are parallel
- B.  $\overrightarrow{LM}$  and  $\overrightarrow{NO}$  are the same line
- C.  $\overrightarrow{LM}$  and  $\overrightarrow{NO}$  are perpendicular
- D.  $\overrightarrow{LM}$  and  $\overrightarrow{NO}$  are parallel

**Based on the article “Lower gas prices may mean no COLA increase” on page A2 of the Monday, October 12<sup>th</sup>, Seattle Times.**

4. Social Security has undergone an automatic annual cost of living adjustment to its benefits every year since 1975. While the adjustment has occasionally left the benefits unchanged, the annual average increase has been 4%. Which of the following equations would model the growth of a Social Security payment that was \$500 in 1975, in the year T?

- A.  $A_t = 520^{T - 1975}$
- B.  $A_t = 500 * (1.04)^{1975T}$
- C.  $A_t = 500 * (1.04)^{T - 1975}$
- D.  $A_t = 500 * (1.04)^T$

5. Given that the average monthly Social Security payment is now \$1,224, what was the average payment in 1975?

- A. \$200
- B. \$250
- C. \$300
- D. \$350

6. For 70% of people, primarily those who have their Medicare premiums removed directly from their Social Security payments, their monthly Medicare premiums are fixed until the cost of living adjustments increase their Social Security payments. For the others, made up of the 2.8 million new beneficiaries, 3.1 million with higher incomes and 1.8 million who do not pay their Medicare premiums directly from their Social Security payments, their Medicare premiums will increase by \$54 per month. If the increase to Medicare beneficiaries premiums were spread evenly across the entire Medicare population, how much more would everybody pay?

- A. \$16.20
- B. \$24.80
- C. \$37.80
- D. \$41.50

7. Examine the graph titled “Social Security raise on hold” on page A2. Given that the cost of living adjustment in 2013 was 1.7%, estimate the total cost of living increase since 2010?

- A. 8%
- B. 9%
- C. 10%
- D. 11%

**Based on the article “Union warns of flight delays from shortage of air controllers” on page A2 of the Wednesday, October 14<sup>th</sup>, Seattle Times.**

8. The number of certified air traffic controllers peaked at 11,753 in 2012. Certified controllers have completed their training and can direct air traffic by themselves. As of now there are 12,037 controllers, but 1,178 of them are still in training. By what percentage has the number of certified air traffic controllers decreased from its peak?

- A. 7.6%
- B. 8.2%
- C. 8.9%
- D. 10.0%

9. During the shutdown of the federal government in 2013, 10% of the air traffic controllers were sent home for 7 days, furloughed to save money. During those 7 days, 12,760 flights were delayed due to air traffic, three times more than normal for that period. What is the typical number of flights that are delayed due to air traffic each year?

- A. 220,000
- B. 450,000
- C. 670,000
- D. 2,000,000

10. The FAA only hired 1,178 of the 1,772 new air traffic controllers that it had planned to hire during 2015. Air traffic controllers are forced to retire at the age of 56, so to maintain the workforce the FAA decided that it needed to hire 11,000 new controllers from year 2013 through year 2019. Even after two years of specialized schooling, new hires still faces between six months and 2 years of training, based on the business of the airport where they are assigned. If the FAA hired an average of 1070 over 2013 and 2014, what is the average number of controllers that they will have to hire from 2016 through 2019?

A. 1,418

B. 1,772

C. 1,948

D. 2,215

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