

Sum up the News – November 22nd, 2016

Vocabulary

1. Two inequalities are graphed on the coordinate plane: $y > |x - 4|$ and $y < 2$. Which of the following best describe the domain of points that satisfy both inequalities?

- A. all numbers more than 2 units away from 4
- B. all numbers less than 2 units away from 4
- C. all numbers more than 4 units away from 2
- D. all numbers less than 4 units away from 2

2. Which of the following equations would define the set of all points on the coordinate plane exactly 10 units away from (3, -5).

- A. $9x^2 + 25y^2 = 100$
- B. $(x - 3)^2 + (y + 5)^2 = 100$
- C. $(x + 3)^2 + (y - 5)^2 = 100$
- D. $(x - 5)^2 + (y + 3)^2 = 10$

3. Triangles FGH and JKL are similar and $\overline{FG} \cong \overline{KL}$. If the ratio of $\overline{FG}$ to $\overline{GH}$ is 3 to 2, what is the ratio of $\overline{GH}$ to $\overline{JK}$?

- A. 4 to 9
- B. 2 to 3
- C. 1 to 1
- D. 3 to 2

Based on the article “International students surging at state colleges, but will it last?” on page B1 of the Monday, November 14th, Seattle Times.

4. Examine the table titled “International Students at UW” on page B1. Roughly 8,000 of the students at the university are international, drawn from 120 countries. What is the average number of students from each of the countries not on the table that are attending the University of Washington?

- A. 13.2
- B. 14.4
- C. 35.1
- D. 66.7

5. There are roughly 28,000 international attending school in Washington State and they are estimated to add \$825 million to the state’s economy. The number of international students coming here has increased by 74% since 2010 and the amount they added to the economy has doubled. How much did each international student add to the state’s economy in 2010?

- A. \$16,900 per international student
- B. \$25,600 per international student
- C. \$31,700 per international student
- D. \$39,800 per international student

6. The state provided \$246 million in funding to the University of Washington in 2015. International students pay \$35,000 in tuition each year, while instate tuition is just \$11,000. By what percentage would the state have had to increase its funding if all the spots taken by international students were filled in instate applicants instead?

- A. 28% increase
- B. 78% increase
- C. 128% increase
- D. 178% increase

Based on the article “Fuel that once grew in forest powers 737 jet across country” on page A9 of the Tuesday, November 15th, Seattle Times.

7. Alaska Airlines is considering replacing 20% of the fuel it uses to refill planes at SeaTac with a biofuel made from trees. The isobutanol releases 80% less CO₂ per gallon of fuel compared with standard jet fuel. Alaska says that making the switch would reduce the amount of CO₂ emissions by 142,000 metric tons each year. How many metric tons of CO₂ do Alaska’s planes leaving from SeaTac release each year?

- A. 170,000 metric tons
- B. 310,000 metric tons
- C. 580,000 metric tons
- D. 890,000 metric tons

8. The test flight used 1080 gallons of the biofuel mixed in with some normal jet fuel. Each gallon of jet fuel releases 9.57 kilograms of CO₂. If the test flight released 30,000 kg of CO₂ then how many gallons of jet fuel were used during the flight?

- A. 2,900 gallons
- B. 3,100 gallons
- C. 3,400 gallons
- D. 4,000 gallons

9. Fuel costs currently make up 16% of Alaska Airlines operating expenses. While jet fuel costs just \$1.25 per gallon, the cost of isobutanol is much higher and the company developing it is hoping that it will be able to reduce the cost down to \$3.50 per gallon. If Alaska Airlines were to switch their fuel mix at every airport they use to 20% isobutanol when the price finally dropped down to \$3.50 per gallon, then by how much would Alaska Airlines’ operating expenses increase?

- A. 5.2% increase
- B. 7.4% increase
- C. 36% increase
- D. 44% increase

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