

Sum up the News – March 21st, 2016

Vocabulary

1. If the X , Y and Z are all positive integers and the expression $\frac{\sqrt[X]{3^Y}}{3^Z}$ is also equal to a positive integer then which of the following must be true?
 - A. Y is a multiple of X
 - B. X is a factor of Z
 - C. $\frac{Y}{X}$ is greater than Z
 - D. Y is a multiple of XZ

2. If the expression $(X + 2Y)^5$ were fully expanded, how many different terms would there be after the like terms are combined?
 - A. 2 terms
 - B. 5 terms
 - C. 6 terms
 - D. 10 terms

3. Polygon $JKLM$ is circumscribed by circle N . If \overline{JL} is a diameter of the circle and \overline{JL} and \overline{KM} are different lengths, then $JKLM$ could be a _____.
 - A. kite
 - B. parallelogram
 - C. rhombus
 - D. trapezoid

Based on the article “High-cost Vancouver, B.C., starts to see exodus of millennials” on page A1 of the Tuesday, March 15th, Seattle Times.

4. The prices of Vancouver real estate have been increasing at such high rates that young professionals are leaving the city. Over the past year, the price of a typical single-family home in Vancouver increased by 26%, to \$1.27 million Canadian, currently equal to \$960,000 U.S. Comparatively, a price of a typical single-family home in King County increased by 20%, to \$515,975. The price increases in Vancouver have been compounded by the weakening of the Canadian dollar, as the exchange rate has jumped from \$1.211 Canadian per U.S. dollar to \$1.323 per U.S. dollar. As of 1 year ago, how much more in U.S. dollars was the price of a typical Vancouver home than the price of a typical King County home?

- A. \$220,000
- B. \$340,000
- C. \$400,000
- D. \$450,000

5. Examine the graph titled “Vancouver vs. Seattle home prices” on page A6. If Seattle home values had increased at the same rate over the past year as the prices in Greater Vancouver approximately how much would the median Seattle home be worth?

- A. \$620,000
- B. \$650,000
- C. \$710,000
- D. \$770,000

Based on the article “‘BIKE REPO BATMAN’ ON ROLL AGAINST THIEVES” on page A1 of the Tuesday, March 15th, Seattle Times.

6. There were 1,561 bike thefts reported to the Seattle Police Department in 2015. The University of Washington’s campus police had another 221 bike or bike parts thefts reported. Roughly 35% of the UW thefts were for just for bike parts, then what percentage of the city’s bike thefts take place in and around UW?

- A. 7.6%
- B. 8.4%
- C. 9.2%
- D. 10.3%

7. Examine the graph titled “Bike thefts rising” on page A1. The Bike index is a non-profit website which helps people recover their stolen bikes. Last year the Bike Index recovered 142 of the bikes stolen. What percentage of stolen bikes were not recovered last year?

- A. 86.7%
- B. 89.8%
- C. 90.3%
- D. 91.1%

8. Examine the graph titled “Bike thefts rising” on page A1. If the growth of bike theft in Seattle was to be modeled growing exponentially, starting with thefts in 2011, approximately how many bikes would be reported stolen to Seattle Police in 2018?

- A. 1,900
- B. 2,100
- C. 2,300
- D. 2,500

Based on the article “Physicians bucking trend on vaccines” on page A1 of the Friday, March 18th, Seattle Times.

9. Measles is making a comeback in western counties as vaccination rates decline. For a community to prevent transmission of the disease, the community needs between 92% and 94% of its members to be vaccinated. Currently in Washington state, 3.5% of children have filed for exemptions from getting vaccinated and another 15% are just behind on getting vaccinated. What fraction of the children not up to date on their immunizations would need to be vaccinated for the minimum level of community immunization to prevent measles transmission?

- A. 11%
- B. 47%
- C. 70%
- D. 83%

10. Without any vaccinations a child catches measles 90% of the time when they are exposed. The measles vaccines prevents the patient from being infected in 93% of cases. If a random Washington child was exposed to measles, how likely would they to become infected?

- A. 0.15
- B. 0.17
- C. 0.20
- D. 0.22

11. High vaccination rates significantly decrease the likelihood of someone getting sick and then passing the disease on to those around them. What is the probability of a vaccinated child catching measles and passing it on to at least one of their three vaccinated siblings?

A. 0.01

B. 0.04

C. 0.13

D. 0.21

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