

Sum up the News – January 31th, 2017

Vocabulary

1. A rectangle has a length, L , equal to two more than three times its width, W . A similar rectangle has width equal the length of the smaller rectangle. What is area of the larger rectangle in terms of W ?

- A. $9W^2 + 8W + 4$
- B. $9W^2 + 12W + 10$
- C. $27W^2 + 6W + 16$
- D. $27W^2 + 42W + 16$

2. Line JK is on the coordinate plane and has a positive slope. If point J is at the origin and point L is on the x -axis, then the tangent of $\angle JKL$ is equal to which of the following?

- A. $\frac{\text{distance from the origin to } K}{\text{distance from the origin to } J}$
- B. $\frac{\text{distance from the origin to } J}{\text{distance from the origin to } K}$
- C. the slope of JK
- D. the reciprocal of the slope of JK

3. Point G is on line FJ and point H is on line FK . If JK is parallel to GH , then which of the following ratios would not be equal?

- A. $\frac{\overline{FG}}{\overline{FJ}}$
- B. $\frac{\overline{FH}}{\overline{FK}}$
- C. $\frac{\overline{GH}}{\overline{JK}}$
- D. $\frac{\overline{GJ}}{\overline{HK}}$

Based on the article “The tricky task of estimating crowds” on page A1 of the Tuesday, January 24th, Seattle Times.

4. The march on Saturday had a number of wildly different estimates of the crowd size, from the 50,000 people who were expected to the 200,000 that organizers claimed attended. Veteran estimators of crowd sizes put the number at between 100,000 and 122,000 by analyzing the area the march covered and using estimate of how many square feet each marcher took up. 10 square feet per person is used when people are marching at arm’s length, while 2.5 square feet is used when people are crammed together. If the area a person takes up is roughly circular, how much larger is the radius of the circle for people standing at arm’s length than the radius of the circle for people that are crammed together?

- A. 0.5 feet
- B. 0.9 feet
- C. 1.2 feet
- D. 1.5 feet

5. The area the protest covered is estimated by measuring the length the streets it covered simultaneously and by taking an average width of the streets. The area covered was estimated to be 995,164 square feet of streets and the streets were determined to be between 66 feet and 96 feet wide. How long was the protest march?

- A. 2 miles
- B. $2\frac{1}{2}$ miles
- C. $2\frac{2}{3}$ miles
- D. 3 miles

6. The sidewalks and planting strips surrounding the streets that the march covered were determined to be cover an area of 443,366 square feet. People walking at arm’s length from each other are estimated to take up 10 square feet each while those standing in a packed crowd cover 4.5 square feet. The estimate assumed that the streets had people at arm’s length and that there was half the normal density of people on sidewalks and planting strips. How much larger would the estimate have been if they had assumed a packed crowd on the sidewalks and planting strips along the route?

- A. 55,000 more people
- B. 76,000 more people
- C. 98,000 more people
- D. 120,000 more people

Based on the article “Deficit projected to soar by \$10T in decade” on page A4 of the Wednesday, January 25th, Seattle Times.

7. The US budget deficit has been shrinking in recent years but is expected to start growing soon. From 2018 to 2027 the deficit is expected to increase each year, to reach \$1 trillion in 2023 and end up at \$1.4 trillion by 2027. In total it’s expected to add \$9.4 trillion to the US debt over those 10 years. If the deficit is going to increase linearly after 2018, what is the deficit projected to be in 2018?

- A. \$500 billion
- B. \$600 billion
- C. \$800 billion
- D. \$1.1 trillion

8. The US debt is expected to reach 89% of gross domestic product (GDP) in 2027. GDP growth is expected to be somewhat slow over this 10 year timespan, projected at just 1.9% annually. If the current GDP is \$16.8 trillion, how much debt will the in 2027?

- A. \$15 trillion
- B. \$16 trillion
- C. \$18 trillion
- D. \$20 trillion

Based on the article “Tax plan for wall amplifies border uproar” on page A1 of the Friday, January 27th, Seattle Times.

9. One proposal floated by the White House to play for the border wall is a 20% tax on all imports from Mexico. They suggest that such a tax would raise the \$20 billion needed to build the wall. Currently imports from Mexico each year add up to \$295 billion. By how much would imports from Mexico have to decrease for the import tax to raise \$20 billion?

- A. 20%
- B. 33%
- C. 45%
- D. 66%

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