Sum up the News – December 13th, 2016

Vocabulary

1. A line on the coordinate plane is rotated 90°. If the equation for the line is ax + by = c, which of the following equations would be parallel to the rotation of the line

    A. ax – by = c

    B. ax + by = -c

    C. ay + bx = c

    D. ay – bx = c

2. A rectangle with an area of 120 square units has a perimeter of 46 units? What is the length of the diagonal of the rectangle?

    A. 16

    B. 17

    C. 19

    D. 23

3. The triangle $\triangle JKL$ has a base of 8 units and a height of 10 units. Line $\overleftrightarrow{FG}$ is parallel to one side of $\triangle JKL$. If G is on $\overline{JK}$ and point F is on $\overline{JL}$, what must the height of the smaller triangle be so that $\overleftrightarrow{FG}$ cuts $\triangle JKL$ into two equal areas?

    A. 5.00 units

    B. 6.25 units

    C. 6.50 units

    D. 7.07 units

Based on the article "Inslee's plan for state pay raises sets up a fight" on page A1 of the Wednesday, December 7th, Seattle Times.

4. Governor Inslee's administration has negotiated pay increases for Washington State's 95,000 public sector workers and contractors. The proposed contract calls for a 6% increase in pay over the next two years for 78,000 of the workers and higher increases for the other 17,000. The proposed raises will add a total of $700 million to the state's budget. If the current average salary for the workers getting the 6% increase is 85,000, what average raise are the other workers getting?

    A. $7,400

    B. $11,500

    C. $13,200

    D. $17,000

5. The largest percentage increase are being given to employees of the State Patrol. The agencies salaries are well below other law enforcement agencies in the state and of the Patrol's 791 positions, 113 are unfilled. The proposed contract will increase the current starting salary of $54,000 by %19. Assume that the number of vacant positions is inversely proportional to the starting salary. How many of the vacant positions would be filled if this raise takes effect?
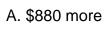
    A. 18

    B. 21

    C. 27

    D. 95

6. State workers have been receiving pay raises irregularly over the past several decades. The raises have come in bunches: a 2% increase followed by a 3% increase, but then several years with no pay increase. Salaries have grown at an average annual rate of 1.8% for the past 45 years. What was approximate average salary for state workers 45 years ago?

    A. $35,000

    B. $38,000

    C. $43,000

    D. $47,000

Based on the article "For $750, a room the size of a parking space" on page A1 of the Thursday, December 8ᵗʰ, Seattle Times.

7. A new listing caught the local real estate world's attention for offering a studio apartment roughly the size of a parking space. The University District studio listed for $750 per month and is just 130 square feet. Typical University District studios rent for $1,215 per month, at rate of $2.60 per square foot. If the small studio was the same size as an average studio in the University District, but retained its own price per square foot, how much more would its rent be?

    A. $880 more

    B. $1950 more

    C. $2230 more

    D. $2700 more

8. Rents in Seattle have been increasing sharply for several years now and newer construction has begun producing smaller and smaller living spaces. Rents increased by 10% from 2010 to 2013. 2013 rents have increased by an average of 41%. Meanwhile the influx of studios and micro-apartments has caused the average size of apartments to decrease by 15% since 2010. By how much has the average price per square foot for new apartments increased since 2013?

    A. 42%

    B. 60%

    C. 66%

    D. 82%

9. The building that houses the tiny studio apartment has a footprint of a right triangle with an area of 3,110 sq. ft. If the longest side of the building is 134.6 feet long, what is approximate length of the shortest side?

    A. 50 feet

    B. 60 feet

    C. 75 feet

    D. 125 feet

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