Vocabulary

1. Given a set of proportional ratios, where the ratio of U to V is equal to the ratio of X to Y, which of the following statements is true?

    A. U = X

    B. if V = X then U = Y

    C. V = Y

    D. UY = VX

2. Triangle B has twice the height of triangle A and an area of three times larger. If triangle B has a base of z units, what is the length of the base of triangle A in terms of z?

    A. $\frac{z}{3}$

    B. $\frac{2z}{3}$

    C. $\frac{4z}{3}$

    D. 2z

3. Two circles, M and N, intersect at points O and P. Circle M has three times the area of circle M. What is the ratio of the length of $\overline{NO}$ to the length of $\overline{MO}$?

    A. 1 to $\sqrt{3}$

    B. $\sqrt{3}$ to 1

    C. 3 to 1

    D. 9 to 1

Based on the article "U.S. to accept up to 85K refugees in 2016, 100K in 2017" on page A1 of the Monday, September 17th, Seattle Times.

4. The new plan for refugee visas will increase the number from 70,000 this year to 85,000 in 2016 and 100,000 in 2017. Over the past 4 years, only 1,500 refugees from Syria have been welcomed into the country. If the entire increase in refugee visas in the next two years is used for Syrian refugees, by what factor will the annual number of Syrian refugees increase by next year?

    A. Increase by a factor 10

    B. Increase by a factor 20

    C. Increase by a factor of 40

    D. Increase by a factor of 80

5. It cost the U.S government $1.1 billion to resettle the 70,000 refugees that have come to this country in 2015. If the cost of resettlement per refugee over the coming years will be on average 5% higher, what will the total cost to resettle refugees be over the next two years?

    A. $1.16 billion

    B. $1.65 billion

    C. $2.91 billion

    D. $3.05 billion

Based on the article "Dramatic overnight increases in old drugs ignite new worries" on page A3 of the Monday, September 21st, Seattle Times.

6. Revenue from the sale of Daraprim was just $667,000 in 2010, for 12,700 total prescription. Then Core Pharma purchased the drug and raised the prices. The next year revenue from sales increased to $6.3 million while the number of prescription remained the same. The company continued to raise its prices and by 2014 sales of Daraprim brought in $9.9 million from just 8,821 prescriptions. By what percentage did the cost of an average prescription increase from 2011 to 2014?

    A. 125%

    B. 225%

    C. 626%

    D. 2137%

7. By 2014, the price per tablet of Daraprim had risen to $13.50. If the average number of tablets consumed for a typical prescription has remained constant, what was the price per tablet in 2010?

    A. $0.53

    B. $0.63

    C. $0.82

    D. $1.00

8. Daraprim is not the only drug whose price has been raised dramatically in recent years. Two heart drugs called Isuprel and Nitropress had their prices raised by 525% and 212% respectively after they were bought By Valeant Pharmaceuticals from Marathon Pharmaceuticals. Marathon had raised the prices on those same drugs themselves by a factor of five since 2013. If Nitropress had cost $10 per pill in 2012, how much would it have cost after Valeant increased its price?

    A. $106.00

    B. $156.00

    C. $262.50

    D. $312.50

9. Turing Pharmaceuticals bought Daraprim this summer for $55 million and then raised the price for the drug from $13.50 per tablet to $750 per tablet. Even if there were 25% fewer prescriptions over the next year, due to the high price, how much would the revenue from the drug exceed what the company paid for the drug?

    A. $137 million

    B. $357 million

    C. $412 million

    D. $494 million

Based on the article "101-story skyscraper on Seattle's Fourth Ave. proposed" on page A10 of the Wednesday, September 23rd, Seattle Times.

10. The 101-story building will have an estimated 1.2 million square feet, including 1,200 residential units and 150 hotel rooms. If each of the floor have the same square footage and the layout of each of the floors are squares, then what would be the perimeter of one of the building's floors?

        A. 109 feet

        B. 287 feet

        C. 436 feet

        D. 11,800 feet

11. The proposed building would supplant the 1,018 feet tall U.S Bank Tower in Los Angeles as the tallest building on the west coast. The Columbia Center is currently Seattle's tallest building at 73-stories and 933 feet high. If the stories in the new buildings have the same average height as those at the Columbia Center, how much taller than the U.S. Bank Tower would the new building be?

        A. 222 feet taller

        B. 307 feet taller

        C. 390 feet taller

        D. 1,240 feet taller