Sum up the News – April 10th, 2017

Vocabulary

1. A vehicle travelling at rate r takes t minutes to travel d meters. If the rate at which the vehicle is traveling is decreased by 80% and the distance it covers is increased by 150%, then how long will the journey be in minutes?

    A. $0.5t$

    B. $3.1t$

    C. $8.0t$

    D. $12.5t$

2. Two concentric circles with diameters of 10 units and 18 units spin together so that the circles rotate the same number of degrees. When the outer circle rotates so that a point on its edge travels 3π feet, how far will a point on the inner circle travel?

    A. 1.67

    B. $\frac{5\pi}{3}$

    C. $\frac{12\pi}{5}$

    D. $\frac{27\pi}{5}$

3. Two diagonals on a regular hexagon are parallel and do not intersect. They divide the shape into two triangles and a rectangle. What is the area of the rectangle in terms the hexagon's side length S?

    A. $\frac{S^2}{2}$

    B. $\frac{\sqrt{3}S^2}{2}$

    C. $\sqrt{3}S^2$

    D. $2S^2$

Based on the article "Norway will build the world's first ship tunnel" on page A13 of the Friday, April 7th, Seattle Times.

4. Norway plans to build a tunnel for ships that will pass under the Stadlandet peninsula. The tunnel would be 5,610 feet long and 118 feet wide. If ships were limited to a speed of 5 miles per hour while passing through the tunnel, how many minutes would it take for a ship to pass through it?

     A. 2.0 minutes

     B. 12.8 minutes

     C. 765 minutes

     D. 1,122 minutes

5. The tunnel will be 162 feet tall above average tide level and will extend 65 feet beneath the water. The shape of the tunnel's cross-section is a "paperclip" oval with two long, vertical sides and semi-circles at each end. What is the area of the tunnel's cross-section?

     A. 23,800 sq. ft.

     B. 30,000 sq. ft.

     C. 37,700 sq. ft.

     D. 43,300 sq. ft.

6. The massive construction project is expected to take 6 years to compete and will involve removing 8 million tons of rock from the where the tunnel will be. If the volume of the tunnel can be modeled as a prism with an oval cross-section, then what is the average density of the rock that will be removed in pounds per cubic foot?

     A. 6 pounds per cubic foot

     B. 70 pounds per cubic foot

     C. 120 pounds per cubic foot

     D. 250 pounds per cubic foot

Based on the Newspapers In Education insert "How to be a financially stable adult" in the Sunday, April 9th, Seattle Times.

7. Examine the graph titled "Tuition costs have skyrocketed" on page 2 of the insert. Tuition has increased 21% since 2010. How much would the minimum wage have to be today for a full-time summer job to pay for one year of tuition?

     A. $15.00 per hour

     B. $17.00 per hour

     C. $18.00 per hour

     D. $20.00 per hour

8. Examine the graph titled "Tuition costs have skyrocketed" on page 2 of the insert. Tuition costs have grown exponentially for decades and have far outpaced the growth in the minimum wage. For the time in the graph, what was the approximate ratio of the average annual rate of tuition growth to the average annual rate of minimum wage growth?

     A. 3 to 2

     B. 2 to 1

     C. 3 to 1

     D. 4 to 1

9. Examine the graph titled "Earning and unemployment rates by educational attainment, 2015" on page 2 of the insert. The guide recommends taking out loans that are no more than the starting salary of the job that the education would help you earn. If your starting salary would be 80% of the median given your education level, what is the maximum amount of loans you should take out for a typical professional degree?

     A. $45,000

     B. $70,000

     C. $85,000

     D. $105,000

10. Examine the graph titled "Earning and unemployment rates by educational attainment, 2015" on page 2 of the insert. If you have attained an Associate's degree what is the percentage chance that you would be earning more than $850 each week?

    A. 46%

    B. 48%

    C. 50%

    D. 52%

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