

## Sum up the News – June 8<sup>th</sup>, 2015

### Vocabulary

1. If a parabola on the coordinate plane has the equation  $y = ax^2 + bx + c$  then the midpoint of the line segment formed by the two x-intercepts of a quadratic equation is located at the point \_\_\_\_\_.

- A.  $(a + b, c)$
- B.  $(\frac{-b}{2a}, 0)$
- C.  $(\frac{b}{a}, c)$
- D.  $(0, b^2 - 4ac)$

2. If line segments  $\overline{GH}$  and  $\overline{JK}$  bisect each other, but are not congruent, then which of the following angles are supplementary?

- A.  $\angle GKH$  and  $\angle GJH$
- B.  $\angle GJH$  and  $\angle JGK$
- C.  $\angle GKJ$  and  $\angle KJH$
- D.  $\angle JGK$  and  $\angle JHK$

3. A dartboard is constructed out of two concentric circles of different, forming two distinct areas, a central circle surrounded by an annulus. The larger circle has a diameter of 20 inches. If a dart thrown randomly at the board will land in the outermost ring 40% of the time, how long is the diameter of the inner circle?

- A.  $4\sqrt{5}$  inches
- B. 8 inches
- C. 12 inches
- D.  $4\sqrt{15}$  inches

**Based on the article “Paris bridge’s locks of love unhitched” on page A10 of the Tuesday, June 2<sup>nd</sup>, Seattle Times.**

4. Approximately 700,000 locks have been attached to the bridge’s railings and then had their keys thrown into the river below. The locks currently on the bridge weigh an estimated 45 tons. Over the years, many of the locks placed on the bridge have been removed and stored as the bridge replaced the metal grillwork they were attached to. If 30% of all the lock ever placed on the bridge have already been removed, how much does the average lock on the bridge weigh?

- A. 0.09 pounds
- B. 0.13 pounds
- C. 0.18 pounds
- D. 0.43 pounds

5. The lock tradition only began in 2006 after the publication of a novel. Since then, on average how many locks have been placed onto the bridge each day?

- A. 100 locks
- B. 200 locks
- C. 400 locks
- D. 600 locks

**Based on the article “State employs lots of tech workers” on page A10 of the Friday, June 5<sup>th</sup>, Seattle Times.**

6 9.2% of workers in Washington state are in STEM fields, the highest percentage in the nation. That percentage narrowly beat out the rate of STEM jobs in Virginia and Massachusetts, each of which have 9% of the workers in STEM occupations. If there are 98,500 more people holding STEM jobs in Virginia than in Washington, how many more total people are employed in Virginia than in Washington?

- A. 1,200,000
- B. 1,400,000
- C. 1,800,000
- D. 4,050,000

**Based on the article “With water cutbacks, farmers risk crop losses” on page A1 of the Sunday, June 7<sup>th</sup>, Seattle Times.**

7. Reservoirs fulfill 40% of the water needs for irrigation in this state. The remaining water comes from the melting of the snowpack in the summer. Currently just 9% of the normal levels of the snowpack remains this year. During a typical year, agriculture in the state uses 3,500 million gallons each day. How much less water than normal will farmers have to use this year?

- A. 470 billion gallons less than normal
- B. 580 billion gallons less than normal
- C. 710 billion gallons less than normal
- D. 950 billion gallons less than normal

8. To improve their water conservation the Rosa district has been replacing its canals with newer pipes. Starting in 1983, they began replacing some of the 280 miles of canals. They expect to be done 15 years from now. What is the average length of canals that are replaced each year with pipes?

- A. 6 miles per year
- B. 9 miles per year
- C. 11 miles per year
- D. 19 miles per year