

Sum up the News – November 16th, 2015

Vocabulary

1. The graph of a quadratic equation on the coordinate plane is translated H units to the right and reflected across the y -axis. If the original vertex was at the point (X, Y) , then the new location of the vertex is at the point _____.

- A. $(X + H, -Y)$
- B. $(X - H, -Y)$
- C. $(-X + H, Y)$
- D. $(-X - H, Y)$

2. If the discriminant of a quadratic equation is equal to 0, then any x -intercepts of the equation's graph will be located on _____ of the equation

- A. the line of symmetry
- B. the slope
- C. the y -axis
- D. the y -intercept

3. Circle M has a radius of 20 inches. Rays \overrightarrow{MN} and \overrightarrow{MP} form an angle of 120 degrees. What is the length of the arc of circle M that lies between the two rays?

- A. 13 inches
- B. 40 inches
- C. 42 inches
- D. 126 inches

Based on the article “LET IT RAIN ... better yet, snow” on page A1 of the Monday, November 9th, Seattle Times.

4. Due to the lack of rain, the utility asked customers at the beginning of August to cut back on their water usage by 10%. By the beginning of November, reduced demand for water by customers had saved more than 1 billion gallons. If customers actually cut their water by just 7%, how much water is used by the customers each month?

- A. 3.3 billion gallons
- B. 4.8 billion gallons
- C. 11 billion gallons
- D. 14.4 billion gallons

5. Heavy rains at the end of October helped raise the water levels in the reservoirs. The eight inches of rain that fell boosted levels from 66% of normal to 90%. How many inches would have been required to fill the reservoirs to normal levels?

- A. 6 inches
- B. 11 inches
- C. 12 inches
- D. 18 inches

6. Examine the graph titled “A season without snowmelt” on page A1. How many inches of snowpack accumulated on average each month during the first 3 months of the year from 1971 to 2000?

- A. 4 inches
- B. 7 inches
- C. 10 inches
- D. 20 inches

Based on the article “King County Library System reclaims bragging rights for fast book-sorting” on page B1 of the Wednesday, November 11th, Seattle Times.

7. The King County library reclaimed the crown of fastest book sorting system in the country. They were able to sort 12,572 books in an hour, 201 more than their New York Public Library rivals were able to sort in the same time. How much longer did it take on average for the New York system to sort each book during the sorting test?

- A. 0.001 seconds
- B. 0.004 seconds
- C. 0.01 seconds
- D. 0.06 seconds

8. The King County library system sorted 14 million books last year, making it one of the busiest systems in the country. If they had been able to maintain the same sorting speed that they achieved on the test for all of last year what percentage of the year would they have spent sorting books?

- A. 8%
- B. 11%
- C. 13%
- D. 17%

Based on the article “Sizzling planet light-years away stirs excitement” on page A5 of the Thursday, November 12th, Seattle Times.

9. The newly discovered planet, GJ 1132b completes one revolution around its sun every 1.6 days. The planet is extremely hot, nearly 500 degrees, because it is so close to its sun, just 1.4 million miles. If the planet’s orbit is circular then how fast is GJ 1132b traveling around its sun?

- A. 140,000 miles per hour
- B. 290,000 miles per hour
- C. 370,000miles per hour
- D. 590,000 miles per hour

10. Earth's speed is 67,000 miles per hour as it orbits our sun in a nearly circular orbit. How many times farther away than GJ 1332b is from its sun is the Earth from our sun?

- A. 48 times farther
- B. 67 times farther
- C. 78 times farther
- D. 92 times farther

11. GJ 1132b is has a volume 16% larger than Earth. The gravity on it would be slightly more powerful than on Earth because its mass is 1.6 times more than Earth's mass. If both planets are roughly spheres, how does the density of GJ 1332b compare with the density of Earth?

Volume of a sphere = $\frac{4}{3}\pi$ (radius)³

- A. 2.5%
- B. 7.3%
- C. 18%
- D. 37%

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