

Sum up the News – October 17th, 2016

Vocabulary

1. Line m has the equation $y = -2x + 6$. Line n is perpendicular and passes through the origin then M and N intersect at which point?

- A. $(\frac{1}{2}, \frac{5}{2})$
- B. $(\frac{12}{5}, \frac{6}{5})$
- C. (4, 2)
- D. $(\frac{24}{5}, \frac{12}{5})$

2. Point P is on line $\overrightarrow{FG}$. If $\overrightarrow{PH}$ bisects $\angle FPG$ and $\overrightarrow{PJ}$ bisects $\angle FPH$, then what is the measure of $\angle JPH$?

- A. 45°
- B. 60°
- C. 90°
- D. 135°

3. Rectangle FGHJ has an area of $12\sqrt{3}$ square units. If the rectangle's diagonal, FH, is twice as long as its width, then what is its perimeter?

- A. $6 + 2\sqrt{3}$
- B. $12 + 2\sqrt{3}$
- C. $12 + 4\sqrt{3}$
- D. $16\sqrt{3}$

Based on the article “Northwest’s big storms connected to typhoons” on page A1 of the Friday, October 14th, Seattle Times.

4. Typhoon Songda began on October 8th 5,000 miles away from Seattle. As of October 11th the storm had traveled 1000 miles and was 5,500 miles away. The storm reached the west coast on Saturday, October 15th. What was the storm’s average speed across the ocean in miles per hour?

- A. 39 miles per hour
- B. 46 miles per hour
- C. 52 miles per hour
- D. 57 miles per hour

5. The listed wind speed of a storm like Typhoon Songda occurs at a certain distance from the center of the circular storm. This radius of maximum wind speed (RMW) typically was about 60 km when Songda’s winds were 55 miles per hour, but shortened to just 50 km when the winds hit their maximum of 150 miles per hour. When Songda’s winds reached their maximum speed about how long did it take for the air at the RMW to make a full rotation around the center of the storm? (1 mile $\approx$ 1.61 km)

- A. 39 minutes
- B. 78 minutes
- C. 90 minutes
- D. 130 minutes

6. The winds of a typhoon cause the waters to swell up in the center of the storm, pulling water from deep in the ocean up to the surface. The deeper water is colder so the storm causes the ocean water at the surface to decrease in temperature. This up swelling of water occurs in a radius three times that of the RMW. When Typhoon Songda was at its maximum speed, what area of ocean surface was it mixing due to upswelling?

- A. 3,000 square miles
- B. 8,700 square miles
- C. 27,000 square miles
- D. 110,000 square miles

Based on the article “Norwegian plans huge new vessel for Seattle to Alaska cruises” on page A10 of the Friday, October 14th, Seattle Times.

7. Norwegian Cruise Line will bring a giant new ship to serve its Seattle-Alaska cruise line starting in 2018. The new ship will be designed to carry 4000 passengers and will replace one of the pair of ships Norwegian currently has sailing that line. Of the eleven total ships currently serving the Seattle-Alaska route, three can carry 3000 passengers and the rest can carry 2400, including Norwegian’s pair. By how much will the new ship increase the average number of passengers that the ships serving the Seattle-Alaska line can carry?

- A. 108 more passengers
- B. 119 more passengers
- C. 131 more passengers
- D. 145 more passengers

8. The 11 ships currently serving the route carried 960,000 passengers this year and 898,000 last year. If on average each ship sailed with the number of passengers they were designed to carry, what was the average number of sailings that the ships made this year?

- A. 28
- B. 30
- C. 34
- D. 37

9. The Port of Seattle is expanding its cruise ship terminal in anticipation of that sort of increase continuing in years to come. If the number of passengers on the Seattle-Alaska route continues to increase exponentially at this year’s rate, how many passengers will it serve in 2020?

- A. 1,200,000
- B. 1,210,000
- C. 1,230,000
- D. 1,250,000

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