

Sum up the News – April 25th, 2016

Vocabulary

1. A sequence with a first term of 5 has terms that are increasing linearly. If the sum of the first 10 terms is 27.5, what is the common difference between the terms?

- A. -2.5
- B. -0.5
- C. 0.5
- D. 2.5

2. A trapezoid is formed by the line L, the x –axis, y-axis and the line $x = 4$. If line L has a slope of 3 and passes through the point (1, 5), what is the area of the trapezoid?

- A. 20 square units
- B. 32 square units
- C. 40 square units
- D. 64 square units

3. Lines \overline{FG} and \overline{FH} are both tangent to circle M, with points G and H both on the circle itself. If \overline{FG} is perpendicular to \overline{FH} , then what is the ratio of major arc GH to minor arc GH?

- A. 2 to 1
- B. 3 to 1
- C. 3.6 to 1
- D. 4 to 1

Based on the article “Asparagus spears sprout as heat hits Yakima Valley” on page A14 of the Wednesday, April 20th, The Seattle Times.

4. With one week left in April, only about 10% of the asparagus crop has been harvested. The harvesting will continue through the first week of June and the total crop is expected to reach 20 million pounds. How many pounds of asparagus will be harvested each week on average?

- A. 1.5 million pounds per week
- B. 3 million pounds per week
- C. 6 million pounds per week
- D. 18 million pounds per week

5. The Washington asparagus growers are fortunate that this bumper crop has come in at a time when the supply of asparagus from California and from Mexico has run low. When California and Mexico are producing asparagus, Washington growers only get between \$30 and \$340 per 28-pound box. Now, with competition scarce, they are instead getting between \$56 and \$58 per box. Which of the following ranges represents the possible additional revenue that Washington asparagus growers will make on their crop due to Mexican and California asparagus now being off the market?

- A. \$11.4 million to \$18.6 million
- B. \$12.9 million to \$18.6 million
- C. \$11.4 million to \$20 million
- D. \$12.9 million to \$20 million

6. Workers picking asparagus have also shared somewhat in the windfall. Whereas they would receive \$0.20 per pound they picked in previous years, right now they are earning \$0.30 per pound. For a worker to earn \$15 per hour picking asparagus, how many boxes must they fill each hour?

- A. 1.8 boxes per hour
- B. 2.7 boxes per hour
- C. 13 boxes per hour
- D. 50 boxes per hour

Based on the article “When will area be safe? Maybe in 3,000 years” on page A1 of the Sunday, April 24th, Seattle Times.

7. It has been 30 years since the catastrophic meltdown at the Chernobyl nuclear plant in the former Soviet Union. When the reactor melted down, the temperature inside it reached 3000 degrees and the water in the reactor turned to steam. The pressure of the steam blew the roof off the building and sent 10 tons of enriched uranium into the sky. The enriched uranium has a half-life of 704 million years. If the reactor had 200 tons of uranium before the explosion, how many pounds of uranium remain buried in the ruins of the reactor?

- A. 190,000 pounds
- B. 360,000 pounds
- C. 380,000 pounds
- D. 400,000 pounds

8. Most of the contamination in the area is from cesium-137, which typically has a half-life of 30 years. However, the soil around the area has concentrations of cesium that are decaying at a much slower rate, with a half-life of 313 years. It is believed that the area will remain unsafe for another 4986 years. What percent of the original concentration of cesium will remain when the area is considered safe?

- A. 0.0015%
- B. 0.079%
- C. 0.64%
- D. 6.3%

9. Since the evacuation, area around Chernobyl in an 18-mile radius has been quarantined, a virtual no-man’s land. The buildings within have begun to crumble and tress and wildlife now dominate the landscape. There is now a proposal to shrink the quarantine zone down to an area with a 6-mile radius so that people can move back in and begin harvesting some of the natural resources there, even though they are contaminated. How much of the formerly quarantined area would be opened to the public?

- A. 113 sq. mi.
- B. 452 sq. mi.
- C. 905 sq. mi.
- D. 1,018 sq. mi.

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