

Sum up the News – April 11th, 2016

Vocabulary

1. If a quadratic function can be factored into a perfect square then the parabola produced by its graph will have _____ x-intercepts?

- A. 0
- B. 1
- C. 2
- D. an unknown number of

2. If the function $g(x) = |x - 2|$ is reflected over the x-axis and translated down c, what is the new range of the function

- A. $-c \leq y$
- B. $-c \geq y$
- C. $-c - 2 \leq y$
- D. $-2 \geq y$

3. Points J, K, and L all lie on circle M. If angle $\angle JKL$ measures 110° , what is the average measure of arcs \widehat{JK} and \widehat{KL} ?

- A. 50°
- B. 70°
- C. 125°
- D. 140°

Based on the article “THE NEEDLE RISES” on page A1 of the Wednesday, April 6th, Seattle Times.

4. A collection of 2400 photos detailing the construction of the Space Needle is now available. The photo series begins with photos from the digging of the 30-foot deep foundation hole in April of 1961. They continue through the completion of the structure in January of 1962. If the final height of the Needle was 605 feet above ground, what was the average rate that the Needle grew taller during its construction process?

- A. 26 inches per day
- B. 28 inches per day

- C. 30 inches per day
- D. 32 inches per day

5. The Needle's foundation hole was circular and stretched 120 feet across. It took 467 truckloads of concrete to fill in the hole. If the hole was a cylinder, how many cubic feet of concrete were in each truck?

- A. 231 cubic feet of concrete
- B. 363 cubic feet of concrete
- C. 517 cubic feet of concrete
- D. 727 cubic feet of concrete

Based on the article "Senate won't put a stop to shrinking of airline seats" on page A1 of the Friday, April 9th, Seattle Times.

6. In recent years, airlines have been steadily decreasing the area that economy class seats are given. Average seat width has decreased from 18 inches to 16.5 inches while the average space between rows of seats has decreased from 35 inches to 31 inches. How many fewer square feet does a passenger in an average economy-class seat now have than they would have had a decade or more ago?

- A. 0.2 fewer square feet
- B. 0.8 fewer square feet
- C. 1.5 fewer square feet
- D. 9.7 fewer square feet

7. People would be having a harder time fitting into airline seats even if they were not getting smaller. The average male has increased in weight from 166 pounds in the 1960s to 196 pounds today. Today, 35% of the male population is considered obese, and by the year 2050, 50% of men are projected to be obese. If the average weight of non-obese men is 166 pounds, then what will be the average weight of men in the country in 2050, assuming that the average weights of the obese and non-obese remain the same?

- A. 217 pounds
- B. 223 pounds
- C. 225 pounds
- D. 230 pounds

Based on the article “PIONEER POD” on page A12 of the Friday, April 9th, Seattle Times

8. The BEAM, or The Bigelow Expandable Activity Module, is an inflatable room being designed for NASA to expand the volume of the Space station. While being rocketed up to space, and while it's being stored, the BEAM is a cylinder, 7 feet long with a diameter of 4 feet. When it unfurls its dimensions change to be 13 feet long and 10.5 inches in diameter. By what factor does the volume of the BEAM decrease when it is deflated?

- A. 24%
- B. 28%
- C. 31%
- D. 37%

9. Larger versions of these inflatable habitats are planned. The B330 habitats when inflated would 11,654 cubic feet of material. The company plans to launch two of these larger habitats by the end of this decade. How much volume would two of the B330 habitats take up?

- A. 7,100 cubic feet
- B. 14,000 cubic feet
- C. 18,000 cubic feet
- D. 22,000 cubic feet

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