

Sum up the News – May 31th, 2016

Vocabulary

1. If the difference between two radicals, \sqrt{m} and \sqrt{n} can be expressed as $3\sqrt{n}$, then what is the relationship between m and n ?

- A. m is 3 times n
- B. m is 4 times n
- C. m is 9 times n
- D. m is 16 times n

2. A line and a circle are both graphed on the coordinate plane, with the circle's center at the origin. The line passes through origin and intersects the circle at the point $(4, 6)$. What is the diameter of the circle?

- A. 5
- B. $2\sqrt{13}$
- C. 10
- D. $4\sqrt{13}$

3. A regular hexagon is bisected by one of its diagonals, forming an isosceles trapezoid, with its smaller base just one-half the length of the larger base. If the perimeter of this trapezoid is 35 inches, what is its height?

- A. $\frac{7\sqrt{3}}{2}$ inches
- B. 7 inches
- C. $\frac{14\sqrt{3}}{3}$ inches
- D. $14\sqrt{3}$ inches

Based on the article “IVAN COMING BACK HOME” on page A1 of the Monday, May 23rd, Seattle Times.

4. Gorillas raised in captivity both weigh more and live longer than those that live in the wild. Those in the wild have a life expectancy of 35 years, while those in captivity tend to live 50 years. Male gorillas in captivity reach 500 lbs., while male gorillas in the wild reach just 400 lbs. Assume that the life span of a male gorilla and their weight are linearly related. If L represents the gorilla's life span and W represents its weight, which of the following equations would represent the relationship between life span and weight.

A. $L = \frac{3}{100} W + 35$

B. $L = \frac{3}{20} W - 25$

C. $L = \frac{2}{3} W - 283$

D. $L = \frac{3}{2} W - 700$

5. The life-size statue of Ivan will be made of bronze. Ivan reached a weight of 500 lbs. in his lifetime and the statute will weigh 650 lbs. Bronze is significantly heavier than flesh and bone. If the statue was solid bronze it would weigh 7.5 times as much as Ivan did. What percentage of the statue's volume is hollow?

A. 23%

B. 71%

C. 83%

D. 91%

6. The finished statue will be 5 feet tall, but a smaller scale model, called a maquette, was made first. The smaller model stand just 10 inches tall but is solid bronze. How much does the maquette weight?

A. 3.01 lbs.

B. 17.4 lbs.

C. 104 lbs.

D. 625 lbs.

Based on the article “What empty nest? More millennials live at home” on page A1 of the Wednesday, May 25th, Seattle Times.

7. A third of people between the ages of 18 and 34 now live at home, including 19% of those between 25 and 34 years of age. If there are an equal number of people of each age in years, then what percentage of people between 18 and 24 are living at home?

- A. 45%
- B. 47%
- C. 50%
- D. 53%

8. Part of what is contributing to the slow rate of household formation is that people are delaying marriage, compared to previous decades. Whereas in the 1960's the median age for first marriages was around 21 years of age, now the median ages for a man or a woman to be first married is now 29 years and 27 years, respectively. Further, 1 in 5 of all those over 25 years of age have never married. How likely is it that a randomly selected 29 year-old man has been married?

- A. 1/10
- B. 2/5
- C. 1/2
- D. 4/5

9. The percentage of young adults living with a partner, married or otherwise, decreased from 43% in the year 2000 to just 31.6% in 2014. If the proportion of young adults living at home decreased exponentially, how many are likely living with a partner now?

- A. 29.7%
- B. 29.9%
- C. 30.0%
- D. 30.2%

Based on the article “Entrepreneurial dreams ride on commercial drone” on page A12 of the Thursday, May 26th, Seattle Times.

10. The AgDrone was demonstrated at the 9000-acre Gold Dust Farms, where it showed that could help farmers visually inspect the land at a much faster rate than they could on foot. A farmer can cover 10 acres in an hour when on foot, but with drone can inspect 700 acres in an hour. How much less time would it take to inspect all of Gold Dust Farms by drone than on foot?

- A. 13 fewer hours
- B. 15 fewer hours
- C. 810 fewer hours
- D. 887 fewer hours

11. If the drone cruises at a speed of 29 miles per hour while it scans the ground, how wide a section of farmland can it scan as it flies overhead? (1 acre = 43,560 square feet; 1 mile = 5280 feet)

- A. 200 feet
- B. 300 feet
- C. 400 feet
- D. 500 feet

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