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PERCENT

- 2004A 11. A company sells peanut butter in cylindrical jars. Marketing research suggests that using wider jars will increase sales. If the diameter of the jars is increased by 25% without altering the volume, by what percent must the height be decreased?
- (A) 10 (B) 25 (C) 36 (D) 50 (E) 60

- 2010B 11. A shopper plans to purchase an item that has a listed price greater than \$100 and can use any one of three coupons. Coupon A gives 15% off the listed price, Coupon B gives \$30 off the listed price, and Coupon C gives 25% off the amount by which the listed price exceeds \$100.

Let x and y be the smallest and largest prices, respectively, for which Coupon A saves at least as many dollars as Coupon B or C. What is $y - x$?

- (A) 50 (B) 60 (C) 75 (D) 80 (E) 100

- 2014A 11. A customer who intends to purchase an appliance has three coupons, only one of which may be used:

Coupon 1: 10% off the listed price if the listed price is at least \$50

Coupon 2: \$20 off the listed price if the listed price is at least \$100

Coupon 3: 18% off the amount by which the listed price exceeds \$100

For which of the following listed prices will coupon 1 offer a greater price reduction than either coupon 2 or coupon 3?

- (A) \$179.95 (B) \$199.95 (C) \$219.95 (D) \$239.95 (E) \$259.95

- 2014B 11. For the consumer, a single discount of $n\%$ is more advantageous than any of the following discounts:

- (1) two successive 15% discounts
- (2) three successive 10% discounts
- (3) a 25% discount followed by a 5% discount

What is the smallest possible positive integer value of n ?

- (A) 27 (B) 28 (C) 29 (D) 31 (E) 33

- 2017B 11. At Typico High School, 60% of the students like dancing, and the rest dislike it. Of those who like dancing, 80% say that they like it, and the rest say that they dislike it. Of those who dislike dancing, 90% say that they dislike it, and the rest say that they like it. What fraction of students who say they dislike dancing actually like it?
- (A) 10% (B) 12% (C) 20% (D) 25% (E) $33\frac{1}{3}\%$

- 2018A 12. How many ordered pairs of real numbers (x, y) satisfy the following system of equations?

$$\begin{aligned}x + 3y &= 3 \\ ||x| - |y|| &= 1\end{aligned}$$

- (A) 1 (B) 2 (C) 3 (D) 4 (E) 8

- 2010B 12. At the beginning of the school year, 50% of all students in Mr. Wells' math class answered "Yes" to the question "Do you love math", and 50% answered "No." At the end of the school year, 70% answered "Yes" and 30% answered "No." Altogether, $x\%$ of the students gave a different answer at the beginning and end of the school year. What is the difference between the maximum and the minimum possible values of x ?
- (A) 0 (B) 20 (C) 40 (D) 60 (E) 80

- 2017B 12. Elmer's new car gets 50% better fuel efficiency, measured in kilometers per liter, than his old car. However, his new car uses diesel fuel, which is 20% more expensive per liter than the gasoline his old car uses. By what percent will Elmer save money if he uses his new car instead of his old car for a long trip?
- (A) 20% (B) $26\frac{2}{3}\%$ (C) $27\frac{7}{9}\%$ (D) $33\frac{1}{3}\%$ (E) $41\frac{2}{3}\%$
- 2007B 14. Some boys and girls are having a car wash to raise money for a class trip to China. Initially 40% of the group are girls. Shortly thereafter two girls leave and two boys arrive, and then 30% of the group are girls. How many girls were initially in the group?
- (A) 4 (B) 6 (C) 8 (D) 10 (E) 12
- 2009B 14. On Monday, Millie puts a quart of seeds, 25% of which are millet, into a bird feeder. On each successive day she adds another quart of the same mix of seeds without removing any seeds that are left. Each day the birds eat only 25% of the millet in the feeder, but they eat all of the other seeds. On which day, just after Millie has placed the seeds, will the birds find that more than half the seeds in the feeder are millet?
- (A) Tuesday (B) Wednesday (C) Thursday (D) Friday
(E) Saturday

- 2017A 14. Every week Roger pays for a movie ticket and a soda out of his allowance. Last week, Roger's allowance was A dollars. The cost of his movie ticket was 20% of the difference between A and the cost of his soda, while the cost of his soda was 5% of the difference between A and the cost of his movie ticket. To the nearest whole percent, what fraction of A did Roger pay for his movie ticket and soda?
- (A) 9% (B) 19% (C) 22% (D) 23% (E) 25%