Easy

1. For $x = 7$, which of the following is the smallest?

(A) $\frac{6}{x}$ (B) $\frac{6}{x+1}$ (C) $\frac{6}{x-1}$ (D) $\frac{x}{6}$ (E) $\frac{x+1}{6}$

2. A child's wading pool contains 200 gallons of water. If water evaporates at the rate of 0.5 gallons per day and no other water is added or removed, how many gallons of water will be in the pool after 30 days?

(A) 140 (B) 170 (C) 185 (D) 198.5 (E) 199.85

3. Ahn chooses a two-digit integer, subtracts it from 200, and doubles the result. What is the largest number Ahn can get?

(A) 200 (B) 202 (C) 220 (D) 380 (E) 398

4. Which of the following numbers is the largest?

(A) 0.97 (B) 0.979 (C) 0.9709 (D) 0.907 (E) 0.9089

5. Julie is preparing a speech for her class. Her speech must last between one-half hour and three-quarters of an hour. The ideal rate of speech is 150 words per minute. If Julie speaks at the ideal rate, which of the following number of words would be an appropriate length for her speech?

(A) 2250 (B) 3000 (C) 4200 (D) 4350 (E) 5650

6. Three bags of jelly beans contain 26, 28, and 30 beans. The ratios of yellow beans to all beans in each of these bags are 50%, 25%, and 20%, respectively. All three bags of candy are dumped into one bowl. Which of the following is closest to the ratio of yellow jelly beans to all beans in the bowl?

(A) 31% (B) 32% (C) 33% (D) 35% (E) 95%

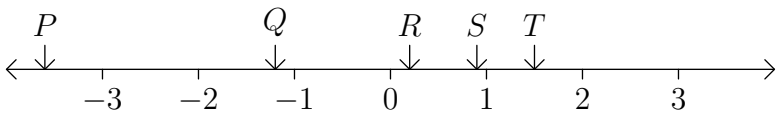
7. $\frac{2+4+6+\cdots+34}{3+6+9+\cdots+51} =$

(A) $\frac{1}{3}$ (B) $\frac{2}{3}$ (C) $\frac{3}{2}$ (D) $\frac{17}{3}$ (E) $\frac{34}{3}$

8. If 5 times a number is 2, then 100 times the reciprocal of the number is

(A) 2.5 (B) 40 (C) 50 (D) 250 (E) 500

9. The letters P, Q, R, S, and T represent numbers located on the number line as shown.



Which of the following expressions represents a negative number?

(A) $P - Q$ (B) $P \cdot Q$ (C) $\frac{S}{Q} \cdot P$ (D) $\frac{R}{P \cdot Q}$ (E) $\frac{S+T}{R}$

10. Brent has goldfish that quadruple (become four times as many) every month, and Gretel has goldfish that double every month. If Brent has 4 goldfish at the same time that Gretel has 128 goldfish, then in how many

months from that time will they have the same number of goldfish?

(A) 4 (B) 5 (C) 6 (D) 7 (E) 8

11. At Clover View Junior High, one half of the students go home on the school bus. One fourth go home by automobile. One tenth go home on their bicycles. The rest walk home. What fractional part of the students walk home?

(A) $\frac{1}{16}$ (B) $\frac{3}{20}$ (C) $\frac{1}{3}$ (D) $\frac{17}{20}$ (E) $\frac{9}{10}$

Medium

1. For a sale, a store owner reduces the price of a 10 dollar scarf by 20%. Later the price is lowered again, this time by one-half the reduced price. The price is now

(A) 2.00 dollars (B) 3.75 dollars (C) 4.00 dollars (D) 4.90 dollars (E) 6.40 dollars

2. In the fall of 1996, a total of 800 students participated in an annual school clean-up day. The organizers of the event expect that in each of the years 1997, 1998, and 1999, participation will increase by 50 percent over the previous year. The number of participants the organizers will expect in the fall of 1999 is

(A) 1200 (B) 1500 (C) 2000 (D) 2400 (E) 2700

3. $2\left(1-\frac{1}{2}\right)+3\left(1-\frac{1}{3}\right)+4\left(1-\frac{1}{4}\right)+\cdots+10\left(1-\frac{1}{10}\right)=$

(A) 45 (B) 49 (C) 50 (D) 54 (E) 55

4. What number should be removed from the list

$$1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11$$

so that the average of the remaining numbers is 6.1?

(A) 4 (B) 5 (C) 6 (D) 7 (E) 8

5. There is a set of five positive integers whose average (mean) is 5, whose median is 5, and whose only mode is 8. What is the difference between the largest and smallest integers in the set?

(A) 3 (B) 5 (C) 6 (D) 7 (E) 8

6. Let x be the number

$$0.\underbrace{0000...0000}_{\text{1996 zeros}}1,$$

where there are 1996 zeros after the decimal point. Which of the following expressions represents the largest number?

(A) $3+x$ (B) $3-x$ (C) $3\cdot x$ (D) $3/x$ (E) $x/3$

7. When Walter drove up to the gasoline pump, he noticed that his gasoline tank was 1/8 full. He purchased 7.5 gallons of gasoline for 10 dollars. With this additional gasoline, his gasoline tank was then 5/8 full. The number of gallons of gasoline his tank holds when it is full is

(A) 8.75 (B) 10 (C) 11.5 (D) 15 (E) 22.5

8. $1-2-3+4+5-6-7+8+9-10-11+\cdots+1992+1993-1994-1995+1996=$

(A) -998 (B) -1 (C) 0 (D) 1 (E) 998

Hard

1. At the grocery store last week, small boxes of facial tissue were priced at 4 boxes for 5 dollars. This week they are on sale at 5 boxes for 4 dollars. The percent decrease in the price per box during the sale was closest to

(A) 30% (B) 35% (C) 40% (D) 45% (E) 65%

2. If the product $\frac{3}{2} \cdot \frac{4}{3} \cdot \frac{5}{4} \cdot \frac{6}{5} \cdot \ldots \cdot \frac{a}{b} = 9$, what is the sum of a and b?

(A) 11 (B) 13 (C) 17 (D) 35 (E) 37

3. Suppose there is a special key on a calculator that replaces the number x currently displayed with the number given by the formula $1/(1-x)$. For example, if the calculator is displaying 2 and the special key is pressed, then the calculator will display -1 since $1/(1-2) = -1$. Now suppose that the calculator is displaying 5. After the special key is pressed 100 times in a row, the calculator will display

(A) -0.25 (B) 0 (C) 0.8 (D) 1.25 (E) 5

4. Ana's monthly salary was 2000 in May. In June she received a 20 percent raise. In July she received a 20 percent pay cut. After the two changes in June and July, Ana's monthly salary was

(A) 1920 dollars (B) 1980 dollars (C) 2000 dollars (D) 2020 dollars (E) 2040 dollars

5. The manager of a company planned to distribute a 50 dollar bonus to each employee from the company fund, but the fund contained 5 dollar less than what was needed. Instead the manager gave each employee a 45 dollar bonus and kept the remaining 95 dollar in the company fund. The amount of money in the company fund before any bonuses were paid was

(A) 945 dollars (B) 950 dollars (C) 955 dollars (D) 990 dollars (E) 995 dollars