ICTM Grade School & Junior High Contests
Sample Questions

3rd Grade:

1. Jack travels to Peoria every 4th day. Sam is there every 5th day. They meet in a restaurant on May 15th. If they keep to their schedules, on what date will they next meet? (Ans: June 4)

2. Omar has 3 quarters and 2 dimes in a jar. He adds 3 nickels and 4 dimes and then takes out 2 quarters. What is the value of the money left in the jar? (Ans: $1.00)

4th Grade:

1. The letters from the word SQUARE are put in a bag. A letter is drawn from the bag. What is the probability that the letter comes after M in the alphabet?

$\left(\text{Ans: } \frac{2}{3}\right)$

2. A grandmother's clock chimes once at 1 o'clock, twice at 2 o'clock, three times at 3 o'clock and so on. The clock chimes 1 time each at 1:30, 2:30, 3:30 and so on. How many times does the clock chime beginning at 12:15 PM and ending at 12:15 AM? (Ans: 90)

5th Grade:

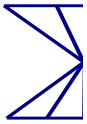
1. In a survey of 100 people, it was found that 64 people read "Tune Magazine" and 75 people read "Tone Magazine." It was also found that 47 people read both magazines. How many people read neither magazine? (Ans: 8)

2. If you are given the following sequence: 1, 4, 7, 10, 13, . . .
in what number will the 10th "4" be found? (Ans: 142)

6th Grade:

1. Elvis wants to be fair dividing up the candy he brought to school between Jerry Lee and Little Richard. The problem is that the candy bars are not divided the same way. $1\frac{1}{2}$ pieces of Chocolate Fantasy is the same as a $\frac{3}{4}$ piece of Luscious Liplickers. How many Luscious Liplickers would equal 12 pieces of Chocolate Fantasy? (Ans: 6)

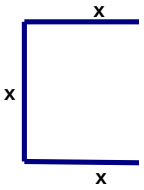
2. How many triangles are shown in the figure?

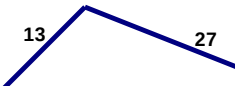


(Ans: 20)

7th Grade:

1.





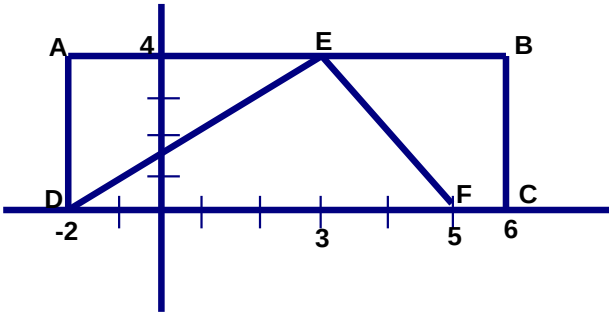
The perimeter of the square is 40% of the perimeter of the triangle. Determine the value of x. (Ans: 7)

2. The sum of the areas of the faces of a cube is 150. If the length of each edge of the cube is doubled, what is the new surface area of the cube? (Ans: 600)

8th Grade:

1. Let $\begin{bmatrix} 3 & 5 \\ -7 & 6 \end{bmatrix} + \begin{bmatrix} w & x \\ y & z \end{bmatrix} = \begin{bmatrix} -1 & 4 \\ 3 & 2 \end{bmatrix}$. Find $w+x+y+z$. (Ans: 1)

2.



What fractional part of rectangle ABCD is triangle DEF?

(Ans: $\frac{7}{16}$)

Algebra:

1. Calculate the value of $x+y$ if $x^2-y^2=150$ and $\frac{x-y}{10}=1$ (Ans: 25)

2.

The perimeter of the triangle is 30. What is the perimeter of the new triangle formed if x is increased by 50%?

(Ans: 39)