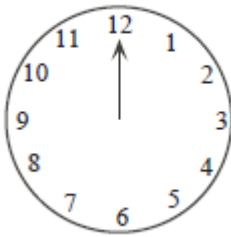Workshop problems Handouts (4 pages):

Page 1

1. $1575 \times N$ is a perfect square. What is the least value of N?

2. The clock shows the time of 12:00 (the hour hand and the minute hand point in the same direction). How much time (in hours) passes until both hands point again in the same direction? Express your answer as a common fraction.

3. In the summation below D=A+B. What is the value of A+B+C+D?

$$\begin{array}{r} 2BA \\ +C6D \\ \hline 8AD \end{array}$$

4. In a club, the ratio of boys to girls was $\frac{13}{19}$. Then, 4 more boys joined the club and now the new ratio is $\frac{5}{7}$. How many boys are now in the club?

5. Find the sum of all prime factors of $3 \times 5 \times 2014$?

6. What is the positive difference between the average and median of 17, 50, 63, 10, and 45?

7. The measures of the sides of triangle A are 5cm, 5cm and 6cm. The measures of the sides of triangle B are 5cm, 5cm and 8cm. What is the ratio of the area of A to the area of B?

8. In how many ways can you walk from Point A to point B if you must walk along the directions marked by arrows?
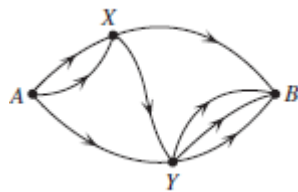
9. Suppose that when a man is at point A (see the figure for Question 22), the

probability that he walks along any of the three paths is $\frac{1}{3}$. If he is at point X the

probability that he walks along any of the 2 paths is $\frac{1}{2}$. If he is at point Y, the

probability that he walks along any of the three paths is $\frac{1}{3}$. Two men walk independently from point A to point B. What is the probability that both choose the same path?

10. Five boys and two girls sit at random at a round table with 7 seats. What is the probability that the girls do not sit next to each other? Express your answer as a common fraction.