

Junior Circle

Meeting 5 Answers

Warmup

1. Multiple answers work
G = 2, H = 5, O=0, S = 9, T = 8, E = 6, U = 1
2. 80, 240
3. No
4. a) $3/16$
b) 12
5. 10
6. 1

Permutations

1. 6
2. a) 120
b) 720
3. 5!
4. $n!$
5. a) 5
b) 9900
c) n
6. $10!/4!$
7. $n!/(n-k)!$
8. $100!/98! = 9900$
9. $4!/2$
10. $4!/4$

Another Look

#1

- a) 1 and 2
- b) 4
- c) 4

#2

5 4 3 2 1

#3

1 4 3 2 5

#4

6 1 2 3 4 5

#5

The second permutation is most “mixed up.”

Note: We did not get a chance to cover this material in class. This section of the worksheet was for those who finished the previous section early and needed something more to work on. Don’t get discouraged if you didn’t understand it. We will cover it in class this week.

#6 Answers can vary

- a) 1 3 2
- b) 2 1 3 4
- c) 2 1 3 4 5
- d) 2 1 4 3

#7

- a) 2 1 3
- b) 1 3 2
- c) 1 2 3 \rightarrow 2 1 3 \rightarrow 2 3 1

#8

- a) 1 3 2 4
- b) 1 4 3 2
- c) 3 2 1 4
- d) 1 2 3 4 \rightarrow 1 3 2 4 \rightarrow 1 4 2 3 \rightarrow 2 4 1 3

#9

First, switch positions 1 and 3

Second, switch positions 1 and 4

First switch positions 3 and 4.

Second, switch positions 1 and 3

#10

1 2 3 \rightarrow 3 2 1 \rightarrow 2 3 1

#11

You will end up with the same permutation you started with.