Circular Permutations

Total points = 40

Problem Set

```
1. n = 8 ✓
   P = [(n-2)-1]!3!
   P = [(8-2)-1]!3!
   = 5!3! √
   = 720 √ ways √
2. n = 6 \checkmark
   P = [(n-1)-1]!2!
   P = [(6-1)-1]!2! \checkmark
   = 4!2! √
   = 48 √ ways ✓
3. n = 10
   P = \frac{(10-1)!}{2}
       9! 2
   P = \frac{9!}{2} \checkmark
   = 181,440 \checkmark ways \checkmark
4. n = 7 \checkmark
   P = (7-1)! 	
   = 6! √
   = 720 √ ways √
```

5. a.
$$n = 13 \checkmark$$

 $P = (13-1)! \checkmark$

=
$$12! \checkmark$$

= $479,001,600$ \checkmark ways \checkmark
b. $n = 13 \checkmark$

$$P = [(n-1)-1]!2! \checkmark P = [(13-1)-1]!2! \checkmark = 11!2! \checkmark$$

=
$$\begin{bmatrix} 79,833,600 \end{bmatrix}$$
 ways \checkmark
c. $n = 13$ \checkmark
 $P = (n-1)! - [(n-1)-1]!2!$ \checkmark

$$P = (13-1)! - [(13-1)-1]!2! \checkmark$$

= 12! - 11!2! \checkmark
= 479,001,600 - 79,833,600 \checkmark
= 399,168,000 \checkmark ways \checkmark

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=479,001,600-79,833,600 \checkmark

= 399,168,000 √ ways ✓

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Problem Set

1.
$$n = 8$$
 \(P = \left[(n - 2) - 1 \right] \text{!3!} \\
 P = \left[(8 - 2) - 1 \right] \text{!3!} \\
 = \frac{5!3!}{720} \(\text{ ways} \) \(\text{!4!} \)

2. $n = 6$ \(P = \left[(n - 1) - 1 \right] ! 2! \\
 P = \left[(6 - 1) - 1 \right] ! 2! \\
 = \frac{4!2!}{48} \(\text{ ways} \) \(\text{!4!} \)

$$= \frac{9!}{2} \(\text{!4!} \)

$$= \frac{9!}{2} \(\text{!4!} \)

$$= \frac{9!}{2} \(\text{!4!} \)

$$= \frac{10 - 1)!}{2} \(\text{!4!} \)

$$P = \frac{(10 - 1)!}{2} \(\text{!4!} \)

$$P = (7 - 1)! \(\text{!4!} \)

$$= 6! \(\text{!4!} \)

$$= 13 \(\text{!4!} \)

$$= 12! \(\text{!4!} \)

$$= 12! \(\text{!4!} \)

$$= 12! \(\text{!4!} \)

$$P = \left[(n - 1) - 1 \right] ! 2! \(\text{!4!} \)

$$P = \left[(n - 1) - 1 \right] ! 2! \(\text{!4!} \)

$$P = \left[(n - 1) ! - \left[(n - 1) - 1 \right] ! 2! \(\text{!4!} \)

$$P = (13 - 1)! - \left[(13 - 1) - 1 \right] ! 2! \(\text{!4!} \)

$$P = (13 - 1)! - \left[(13 - 1) - 1 \right] ! 2! \(\text{!4!} \)

$$P = (13 - 1)! - \left[(13 - 1) - 1 \right] ! 2! \(\text{!4!} \)

$$= 12! - 11! 2! \(\text{!4!} \)

$$= 479,001,600 - 79,833,600 \(\text{!4!} \)

$$= 399,168,000 \(\text{!4!} \)

$$= 399,168,000 \(\text{!4!} \)$$

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Problem Set

Froblem Set

1.
$$n = 8 \checkmark$$
 $P = [(n-2)-1]!3! \checkmark$
 $P = [(8-2)-1]!3! \checkmark$
 $= 5!3! \checkmark$
 $= 720 \checkmark$ ways \checkmark

2. $n = 6 \checkmark$
 $P = [(n-1)-1]!2! \checkmark$
 $P = [(6-1)-1]!2! \checkmark$
 $= 4!2! \checkmark$
 $= 48 \checkmark$ ways \checkmark

3. $n = 10 \checkmark$
 $P = \frac{(10-1)!}{2} \checkmark$
 $P = \frac{9!}{2} \checkmark$
 $= 181,440 \checkmark$ ways \checkmark

4. $n = 7 \checkmark$
 $P = (7-1)! \checkmark$
 $= 6! \checkmark$
 $= 720 \checkmark$ ways \checkmark

5. a. $n = 13 \checkmark$
 $P = (13-1)! \checkmark$
 $= 12! \checkmark$
 $= 479,001,600 \checkmark$ ways \checkmark

b. $n = 13 \checkmark$
 $P = [(n-1)-1]!2! \checkmark$
 $P = [(13-1)-1]!2! \checkmark$
 $P = [(13-1)-1]!2! \checkmark$
 $P = (13-1)! - [(n-1)-1]!2! \checkmark$
 $P = (13-1)! - [(n-1)-1]!2! \checkmark$
 $P = (13-1)! - [(n-1)-1]!2! \checkmark$
 $= 11!2! \checkmark$
 $= 12! - 11!2! \checkmark$
 $= 12! - 11!2! \checkmark$
 $= 479,001,600 - 79,833,600 \checkmark$
 $= 399,168,000 \checkmark$ ways \checkmark