

Part I: Multiple Choice. Choose the correct answer.

1. Solve for
- n
- , where
- $n \in \mathbb{I}$
- .

(A) 10
(B) 19
(C) 20
(D) 39

$$2 \left(\frac{(n+1)!}{n!} \right) = 40$$

2. Solve for
- n
- , where
- $n \in \mathbb{I}$
- .

(A) 8
(B) 16
(C) 24
(D) 32

$$\frac{n!}{(n-1)!} = 4!$$

3. Solve for
- n
- , where
- $n \in \mathbb{I}$
- .

(A) 13
(B) 15
(C) 17
(D) 18

$$\frac{(n-2)!}{(n-3)!} = 15$$

4. Solve for
- n
- , where
- $n \in \mathbb{I}$
- .

(A) 3
(B) 4
(C) 5
(D) 6

$$5 \left(\frac{(n+2)!}{n!} \right) = 100$$

5. Solve for
- n
- , where
- $n \in \mathbb{I}$
- .

(A) 8
(B) 9
(C) 10
(D) 11

$$\frac{n!}{2(n-2)!} = 45$$

Answers to multiple choice.

1.____ 2.____ 3.____ 4.____ 5.____

**Part II: Constructed Response. Answer each question in the space provided.
Show all workings.**

6. Solve for n , where $n \in \mathbb{I}$.

(A)
$$\frac{(n+10)!}{(n+9)!} = 20$$

(B)
$$\frac{(n-1)!}{(n-2)!} = 12$$

(C)
$$\frac{10n!}{(n+1)!} = 2$$

(D)
$$\frac{(n+1)!}{2(n-1)!} = 6$$