

PC40S Factorial Notation

A. Simplify the following.

1.) $\frac{7!}{6!}$

2.) $\frac{3!}{30!}$

3.) $\frac{9!}{6!}$

4.) $\frac{10!}{6!4!}$

5.) $\frac{(k+3)!}{(k+2)!}$

6.) $\frac{7!(r+2)!r}{6!(r-1)!}$

B. Solve for n.

1.) $n! = 20(n-2)!$

2.) $\frac{(n+2)!}{8!(n-2)!} = \frac{57}{16}$

3.) $\frac{(n+1)!}{(n-1)!} - 30 = 0$

C. Which of the following expressions is equal to n. (There can be more than one.)

i. $\frac{n!}{(n+1)!}$

ii. $\frac{n!}{(n-1)!}$

iii. $\frac{(n+1)!}{n!} \cdot \frac{n}{n+1}$

iv. $\frac{n+1!}{n!}$

v. $\frac{n^2(n-1)!}{n!}$