

Zadatak 3. Skrati razlomke:

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|-----------------------------|-------------------------------|
| 1) $\frac{15!}{13!};$ | 2) $\frac{8!}{5!};$ |
| 3) $\frac{n!}{(n-2)!};$ | 4) $\frac{(n+1)!}{(n-1)!};$ |
| 5) $\frac{(2n)!}{n!};$ | 6) $\frac{(n+k)!}{(n+k-2)!};$ |
| 7) $\frac{(n+1)!}{(n-2)!};$ | 8) $\frac{2n(2n-1)}{(2n)!}.$ |

Rješenje.

- 1) $\frac{15!}{13!} = \frac{13! \cdot 14 \cdot 15}{13!} = 14 \cdot 15 = 210;$
- 2) $\frac{8!}{5!} = \frac{5! \cdot 6 \cdot 7 \cdot 8}{5!} = 6 \cdot 7 \cdot 8 = 336;$
- 3) $\frac{n!}{(n-2)!} = \frac{(n-2)!(n-1)n}{(n-2)!} = (n-1)n;$
- 4) $\frac{(n+1)!}{(n-1)!} = \frac{(n-1)!n(n+1)}{(n-1)!} = n(n+1);$
- 5) $\frac{(2n)!}{n!} = \frac{n!(n+1)(n+2) \cdots (2n)}{n!} = (n+1)(n+2) \cdots (2n);$
- 6) $\frac{(n+k)!}{(n+k-2)!} = \frac{(n+k-2)!(n-k-1)(n-k)}{(n+k-2)!} = (n-k-1)(n-k);$
- 7) $\frac{(n+1)!}{(n-2)!} = \frac{(n-2)!(n-1)n(n+1)}{(n-2)!} = (n-1)n(n+1);$
- 8) $\frac{2n(2n-1)}{(2n)!} = \frac{2n(2n-1)}{(2n-2)!(2n-1)(2n)} = \frac{1}{(2n-2)!}.$