

Fiche n° 19. Coefficients binomiaux

Réponses

19.1 a) $\boxed{10\ 100}$

19.1 b) $\boxed{720}$

19.1 c) $\boxed{\frac{1}{30}}$

19.1 d) $\boxed{15}$

19.1 e) $\boxed{56}$

19.1 f) $\boxed{140}$

19.2 a) $\boxed{\frac{9!}{5!}}$

19.2 b) $\boxed{\binom{9}{4}}$

19.2 c) $\boxed{2^n \times n!}$

19.2 d) $\boxed{\frac{(2n+1)!}{2^n \times n!}}$

19.3 a) $\boxed{\frac{n(n-1)}{2}}$

19.3 b) $\boxed{\frac{n(n-1)(n-2)}{6}}$

19.3 c) $\boxed{\frac{k+1}{n-k}}$

19.3 d) $\boxed{(n+2)(n+1)}$

19.3 e) $\boxed{\frac{1}{(n+1)!}}$

19.3 f) $\boxed{\frac{n! \times (n-3)}{2^{2n+2}}}$

19.4 a) $\boxed{\frac{(n+1)^3}{n \times (n+2)!}}$

19.4 b) $\boxed{\frac{3(3n+2)(3n+1)}{a^3(n+1)^2}}$

19.5 a) $\boxed{3^n}$

19.5 b) $\boxed{0}$

19.5 c) $\boxed{6^n}$

19.5 d) $\boxed{12 \times 15^n}$

19.6 a) $\boxed{2 \times \sum_{p=0}^{\lfloor \frac{n}{2} \rfloor} \binom{n}{2p}}$

19.6 b) $\boxed{2^{n-1}}$

19.7 a) $\boxed{2^n}$

19.7 b) $\boxed{n2^{n-1}}$

19.7 c) $\boxed{n(n+1)2^{n-2}}$

19.7 d) $\boxed{\frac{2^{n+1} - 1}{n+1}}$

19.8 a) $\boxed{\binom{2n}{n}}$

19.8 b) $\boxed{\sum_{k=0}^n \binom{n}{k}^2}$

19.8 c) $\boxed{\binom{2n}{n}}$