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1. (1) 15120; (2) 59049. 210, 1680; 720, 6561. 2. $(p+1)(q+1)-1$.
 3. 1470, 89. 5. $(m+n-2)! + \{(m-1)!(n-1)!\}$. 6. 800. 7. $(p+1)!$
 $+ \{n!(p-n+1)!\}$. 8. (1) 495; (2) 35; (3) 10.

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3. 10, 16, 18.

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2. $6! x^3 y^3 + (3! 3!)$; $20! x^{10} y^{10} + (10! 10!)$; $-14! (2a)^4 (3y)^3 + (7! 7!)$;
 $77x^4 y^6 + 3888$. 3. $5! (2a)^4 (3b)^2 + (3! 2!)$, $-5! (2a)^4 (3b)^2 + 2! 3!$; $-23! x^{12}$
 $y^{11} + (12! 11!)$, $23! x^{11} y^{12} + (11! 12!)$; $17! x^{12} y^{16} + 9! 8!$, $-17! x^{12} y^{16} + 8! 9!$.
 4. $(-1)^n n! x^r + (n-r)! r!$; $m! 3^r x^r + (m-r)! r!$; $(-1)^n n! a^{n-r} 2^r x^r + (n-r)!$
 $r!$

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1. (1) x^r ; (2) $(-1)^r x^r$; (3) $(r+1)x^r$; (4) $(r+1)(r+2)x^r + 1.2$;
 (5) $(r+1)(r+2)(r+3)x^r + 1.2.3$; (6) $m(m+1) \dots (m+r-1)x^r + 1.2.3 \dots r$.
 2. $-1.3 \dots (2r-3)x^r + (2.4 \dots 2r)$; $1.3 \dots (2r-1)x^r + (2.4 \dots 2r)$; $(-1)^r$
 $1.3 \dots (2r-5)3a! x^r + (2.4 \dots 2r.a^r)$; $5.6 \dots (r+4)(2a)^{-2} 3^r x^r + (1.2 \dots r$
 $2^r a^r)$. 3. $-9.7.5.3x^2 + 2.4 \dots 12$. 5. $(-1)^{r-1} 2.5 \dots (3r-4)x^r + 3.6 \dots 3r$;
 $(-1)^r 2.5 \dots (3r-1)x^r + r!$; $1.6.11 \dots (5r-4)x^r + (5.10 \dots 5r)$. 3. $(r+1)^2$;
 $2r^2 + 2r + 1$; $8r - 4$. 8. $(-1)^r n(n+1) \dots (n+r-1) + r!$. 10. (1) $(1-\frac{1}{2})^{-2}$;
 (2) $(1+\frac{1}{2})^{-1}$; (3) $(1-\frac{1}{2})^{-1}$; (4) $(1-\frac{1}{2})^{-1}$.

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1. 489898; 894427; 248998; 149066; 349285. 2. 397906; 984886;
 014586; 299256; 0198945. 3. 000026. 4. $i - x$; $\frac{1}{2} + \frac{1}{3}x$; $\frac{1}{2} + \frac{1}{11}x$;
 $1 - \frac{1}{2}x$; $\frac{1}{11} - \frac{1}{11}x$.

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1. (1) 6th and 7th; (2) 1st; (3) 4th, 6th and 7th; (4) 3rd and
 4th. 2. (1) 5th and 6th; (2) 8th; (3) 24th and 25th; (4) 19th.

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1. $(-1)^n (2n)! \div (n! n!)$. 5. 2^n ; $2^n (n+r+1) - n2^{n-1}$. 6. (1) $\sqrt{5} + 2$;
 $3^2 + 2^2 - 1$. 7. $2^n (n+r) - n2^{n-1}$. 10. $x^n \div (1-x)$; $\{(n+1)x^n - nx^{n+1}\} +$
 $(1-x)^2$. 12. $25! \div (5! 7! 13!)$. 14. $n(n-1)(4n^2 + 16n - 21) \div 6$.