4. $\dfrac{x - a}{\dfrac{1}{x} - \dfrac{1}{a}}$ as x approaches a indefinitely.

5. $\dfrac{x^2 - a^2}{x^3 - a^3}$ " " " " "

6. $\dfrac{\dfrac{a}{x} - \dfrac{x}{a}}{x - a}$ " " " " "

7. $\dfrac{(x + a)^n - (x - a)^n}{x^{n-1}}$ as x increases indefinitely.

8. $\dfrac{(1 + ax)^3}{(1 + bx)^3}$ " " " "

9. $\dfrac{(1 - ax)^n}{(1 - bx)^n}$ " " " "

10. $\dfrac{1^2 + 2^2 + 3^2 + 4^2 + \ldots . n^2}{n^3}$ as n increases indefinitely.

11. $\dfrac{1^3 + 2^3 + 3^3 + \ldots . + n^3}{n^4}$ " " " "

12. $\dfrac{1^m + 2^m + 3^m + 4^m + \ldots . + n^m}{n^{m+1}}$ " "

13. The first term of a series is $\frac{1}{3}$, the second $-\frac{1}{6}$, and each succeeding term one half the sum of the two which precede it. To what limits will the nth term and the sum of the series approach as n increases indefinitely?

14. Find the limit toward which the nth term approaches when

First	term	=	$a + 2b$;	second	term	=	$a - b$;
"	"	=	1;	"	"	=	$\frac{1}{2}$;
"	"	=	a;	"	"	=	b;

each term after the second being half the sum of the two preceding terms.

15. The first term of a series is a, the second b, and each following one the geometrical mean of the two preceding it. Show that, as n increases indefinitely, the nth term approaches the limit $a^{\frac{1}{3}}b^{\frac{2}{3}}$.