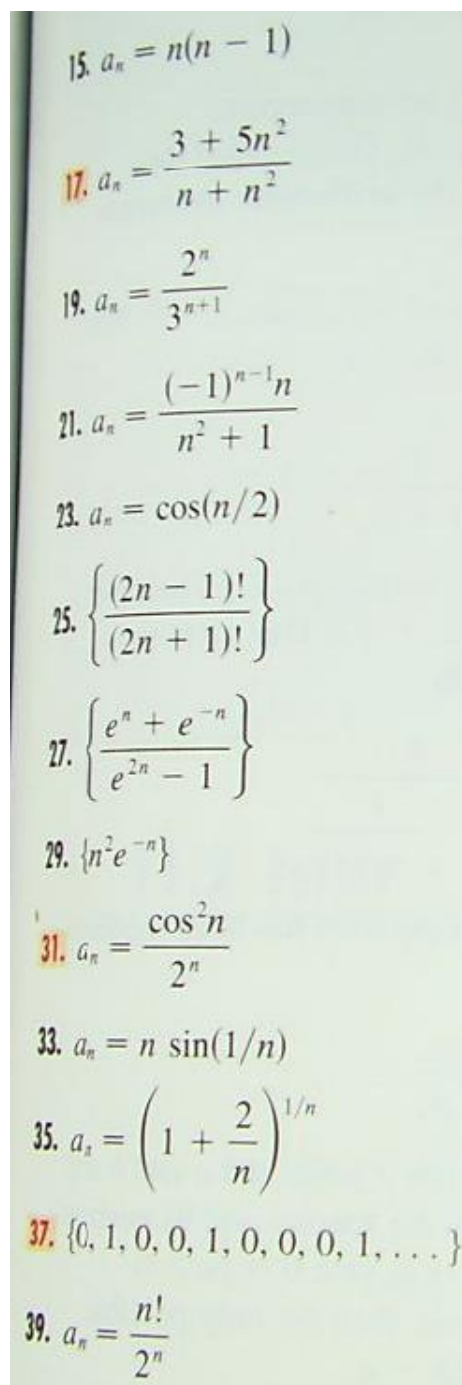


Quiz 1 Review.

1. To determine if a sequence converge, take the limit an n approaches infinity. If the limit exists, the sequence converges to that point. If the limit does not exists, the sequence diverges. Determine if the following converge or diverge. If it converges, tell what it converges to.



Answers

15. D	17. 5	19. 0	21. 0
23. D	25. 0	27. 0	29. 0
33. I	35. I	37. D	39. D
			41. D
			31. 0

- II. Geometric series - A geometric series will converge if the $|r| < 1$. If $|r| > 1$ the series diverges. To find the sum $\frac{a}{1-r}$. Determine if the series converge or diverge. If it converges, find the sum.

11. $3 + 2 + \frac{4}{3} + \frac{8}{9} + \dots$

13. $-2 + \frac{5}{2} - \frac{25}{8} + \frac{125}{32} - \dots$

15. $\sum_{n=1}^{\infty} 5\left(\frac{2}{3}\right)^{n-1}$

17. $\sum_{n=1}^{\infty} \frac{(-3)^{n-1}}{4^n}$

19. $\sum_{n=0}^{\infty} \frac{\pi^n}{3^{n+1}}$

21. $\sum_{n=1}^{\infty} \frac{n}{n+5}$

23. $\sum_{n=2}^{\infty} \frac{2}{n^2 - 1}$

25. $\sum_{k=2}^{\infty} \frac{k^2}{k^2 - 1}$

27. $\sum_{n=1}^{\infty} \frac{3^n + 2^n}{6^n}$

29. $\sum_{n=1}^{\infty} \sqrt[n]{2}$

Answers

11. 9	13. D	15. 15	17. $\frac{1}{2}$	19. D	21. D
13. D	25. D	27. $\frac{1}{2}$	29. D	31. D	33. $\frac{1}{2}$

Determine if the following converges or diverges. Use any method

$$3. \sum_{n=1}^{\infty} \frac{1}{n^4}$$

$$4. \sum_{n=1}^{\infty} \frac{1}{\sqrt[4]{n}}$$

$$5. \sum_{n=1}^{\infty} \frac{1}{3n+1}$$

$$6. \sum_{n=1}^{\infty} e^{-n}$$

$$7. \sum_{n=1}^{\infty} ne^{-n}$$

$$8. \sum_{n=1}^{\infty} \frac{n+2}{n+1}$$

$$9. \sum_{n=1}^{\infty} \frac{2}{n^{0.85}}$$

$$10. \sum_{n=1}^{\infty} (n^{-1.4} + 3n^{-1.2})$$

$$11. 1 + \frac{1}{8} + \frac{1}{27} + \frac{1}{64} + \frac{1}{125} + \dots$$

$$12. 1 + \frac{1}{2\sqrt{2}} + \frac{1}{3\sqrt{3}} + \frac{1}{4\sqrt{4}} + \frac{1}{5\sqrt{5}} + \dots$$

$$13. \sum_{n=1}^{\infty} \frac{5 - 2\sqrt{n}}{n^3}$$

$$14. \sum_{n=3}^{\infty} \frac{5}{n-2}$$

$$15. \sum_{n=1}^{\infty} \frac{1}{n^2 + 4}$$

$$16. \sum_{n=1}^{\infty} \frac{3n+2}{n(n+1)}$$

$$17. \sum_{n=1}^{\infty} \frac{n}{n^2 + 1}$$

$$18. \sum_{n=1}^{\infty} \frac{1}{n^2 - 4n + 5}$$

$$19. \sum_{n=1}^{\infty} ne^{-n^2}$$

$$20. \sum_{n=1}^{\infty} \frac{\ln n}{n^2}$$

$$21. \sum_{n=2}^{\infty} \frac{1}{n \ln n}$$

$$22. \sum_{n=1}^{\infty} \frac{n}{n^4 + 1}$$

$$23. \sum_{n=1}^{\infty} \frac{1}{n^3 + n}$$

$$24. \sum_{n=3}^{\infty} \frac{1}{n \ln n \ln(\ln n)}$$

3. C 5. D 7. C 9. D 11. C 13. C 15. C

17. D 19. C 21. D 23. C

