For each series find a) the number of terms
b) the 1st term
c) the last term
d) the sum of the series

18. $\sum_{n=1}^{5} (3n+1)$

19. $\sum_{n=1}^{8} \frac{2n}{3}$

20. $\sum_{n=4}^{10} (.8n-.4)$

21. $\sum_{n=2}^{6} (-2)^{n-1}$

22. Explain how you know if a geometric series converges or diverges. Include examples of both situations. Evaluate the series that converges.

23. A diamond is purchased for $2500. Suppose its value increases by 5% each year. Find the value of the diamond after 8 years.

Use summation notation to express each series for the specified number of terms.

24. $10+7+4+\ldots$ $n=5$

25. $12+2+\frac{1}{3}+\ldots$ $n=10$

26. $80-40+20-\ldots$ $n=7$

Decide whether each series diverges or converges. If it has a sum, find it.

27. $150+30+6+\ldots$

28. $2.2+2.42+2.662+\ldots$

29. $-10-20-40-\ldots$

30. $\frac{2}{3}+\frac{4}{9}+\frac{8}{27}+\ldots$