Section A Comprehensive Review

Directions: Show all work. Use exact values. Box or circle all answers.

1. Find the common ratio and write the next three terms: $9,18,36,72,\ldots$

2. Find the common ratio and write the next three terms: $7,21,63,189,\ldots$

3. Find the common ratio and write the next three terms: $256,64,16,4,\ldots$

4. Find the common ratio and write the next three terms: $625,125,25,5,\ldots$

5. Is $5,15,45,135,\ldots$ a geometric sequence? Explain.

6. Is $4,12,36,108,\ldots$ a geometric sequence? Explain.

7. Is $2,5,10,17,\ldots$ a geometric sequence? Explain.

8. Is $3,8,15,24,\ldots$ a geometric sequence? Explain.

9. Is $12,-6,3,-\frac{3}{2},\ldots$ a geometric sequence? Explain.

10. Is $20,-10,5,-\frac{5}{2},\ldots$ a geometric sequence? Explain.

11. A geometric sequence has $a_1 = -4$ and common ratio $r = -2$. Write the first five terms of the sequence.

12. A geometric sequence has $a_1 = -3$ and common ratio $r = -3$. Write the first five terms of the sequence.

13. Find a_7 if $a_1 = 4$ and $r = 3$.

14. Find a_8 if $a_1 = 2$ and $r = 2$.

15. Find a_6 if $a_1 = 160$ and $r = \frac{1}{2}$.

16. Find a_7 if $a_1 = 192$ and $r = \frac{1}{2}$.

17. Find a_5 if $a_1 = 5$ and $r = -2$.

18. Find a_6 if $a_1 = 3$ and $r = -2$.

19. A population has 96 organisms at the end of year 1 and doubles each year. State the common ratio and find the population at the end of year 4.

20. A population has 75 organisms at the end of year 1 and doubles each year. State the common ratio and find the population at the end of year 5.

21. A medication contains 800 mg at the end of hour 1 and is cut in half each hour. State the common ratio and find the amount at the end of hour 4.

22. A medication contains 960 mg at the end of hour 1 and is cut in half each hour. State the common ratio and find the amount at the end of hour 5.

23. Find a_6 if $a_1 = 243$ and $r = \frac{1}{3}$.

24. Find a_7 if $a_1 = 729$ and $r = \frac{1}{3}$.