Answer key for Review – Sequences & Exponential Functions

1. -5, -7
2. 7, 10
3. f(n) = 5n – 14
4. A(1) = -9
   A(2) = -3
   A(5) = 15
   A(9) = 39
5. $\frac{4}{27}$, - $\frac{4}{81}$
   Not arithmetic,
   Pattern is divide by -3
6. 8, $8\frac{1}{4}$
   Arithmetic,
   f(n) = $\frac{1}{4}$ n + 6 $\frac{3}{4}$
7. 7 lb 4 oz, 7 lb 9 oz, 7 lb 14 oz,
   8 lb 3 oz, 8 lb 8 oz
   5th term is baby's wt after 4 wks (8 lb 8 oz)
8. $4500, $4350, $4200, $4050, $3900
   5th term is the car loan's balance after 4 months ($3900)
9. A(2) = 1
   A(4) = $\frac{13}{5}$
   A(8) = $\frac{29}{5}$
10. 21, 34
    Not arithmetic, each term is the sum of the 2 preceding terms
11. - $\frac{1}{2}$, - $\frac{1}{4}$
12. 48, 96
13. $f(n) = 8(2.5)^{n-1}$
14. A(1) = 5
    A(2) = 15
    A(5) = 405
    A(9) = 32,805
15. $\frac{5}{64}$, $\frac{5}{256}$
    Geometric, $f(n) = 20(\frac{1}{4})^{n-1}$
16. -2, -5
    Arithmetic, f(n) = -3n + 13
17. A(2) = 4.4
    A(4) = 70.4
    A(8) = 18,022.4
18. $f(n) = 36(.90)^{n-1}$
    f(6) ≈ 21 cm
19. investments: 4050, 6075, 9112.5, 13668.75
    $f(x) = 800(1.5)^{x/5}$
    matter: 400, 200, 100, 50, 25
    $f(x) = 3200(.5)^{x}$
20. 131,072 mice
21. Decay
22. Growth
23. 1995: f(5) ≈ $296,921.58
    2006: f(16) ≈ $433,496.51
24. f(3) ≈ $17,036.80
    f(7) ≈ $10,216.89
25. between 8 and 9 years
26. f(7) ≈ $283.61