1. $k = 12$

2. $\left[\dfrac{1}{2}, \infty\right)$ $R : [0, \infty)$

3. $k^2 + k$

4.   II and III only

5. $f(x) = \begin{cases} -x + 1 & \text{if } x < 0 \\ \dfrac{1}{4}x - 2 & \text{if } x \geq 0 \end{cases}$

6.   \$7,284.60

7.   None of the above (6)

8. $\dfrac{3x}{1 + 2x}$

9. $f^{-1}(x) = \dfrac{3 - 2x}{x}$

10.   Joan : 78.9 years; Leah : 77.3 years

11. $x = -3$

12.   30.88 db

13. $\dfrac{1}{2}\log_b x - 3\log_b y$

14. $\log_b 0 = 1$

15.   x = 5