

1. $\frac{1}{x^2 - 8x + 19}$

2. $y = -3$

3. $y = 13,000x + 120,000$

4. II and III only.

5. $m = \frac{1}{2}$

6. $f(x) = \begin{cases} 1 & \text{if } x < -1 \\ x^2 - 3 & \text{if } x \geq -1 \end{cases}$

7. $(g - f)(16) = -25$

8. $\left[\frac{3}{2}, \infty\right)$

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

10. $(0,1)$ and $(-2,9)$

11. 113,017

12. $x = \frac{1}{5}$

13. 4.1

14. $\log_b 2 + \log_b x + \frac{1}{3} \log_b y$

15. $(-1,0), (6,0), (0,-6)$