

Answer Sheet to Test 3 Review

1. $-\frac{1}{5}$

2. $\frac{-1}{(x-1)(x+h-1)}$

3. a) $D: x \neq \pm 3$

b) $D: -3 \leq x \leq 3$

c) $D: x \geq 1 \text{ or } [1, \infty)$

d) $D: [-2, 3) \cup (3, \infty)$

4. $\frac{1}{a}$

5. 1

6. -2

7. A graph with a parabola and a straight line is the answer.

8. 2

9. Vertex = (2, -1)

y- intercept = (0, 7)

Minimum Value is -1

(Also a graph should be drawn)

10. Undefined

11. $(f \circ g)(x)$

12. They are *inverses*

13. $\frac{x-5}{2}$

14. $\frac{-x-2}{x-1}$

15. You picked from a set of four graphs and D was the answer.

16. Two answers: 1) $\frac{x}{4-x}$ 2) 1

17. (a) $Q(x) = x^3 - x^2 + 3x - 13$ $R = 31$

(b) $Q(x) = 2x^2 + 2x + 6$ $R = 23$

18. $x^3 - 4x^2 + 14x - 20$

19. $x^4 - 2x^3 - 12x^2 - 14x - 5 = 0$

$$\begin{array}{r|rrrrr}
 -2 & 1 & 3 & -6 & -28 & -24 \\
 & & -2 & -2 & 16 & 24 \\
 \hline
 & 1 & 1 & -8 & -12 & 0
 \end{array}$$

21. 8

22. $\left\{ \pm 1, \pm \frac{1}{2}, \pm \frac{1}{4}, \pm \frac{1}{8}, \pm 3, \pm \frac{3}{2}, \pm \frac{3}{4}, \pm \frac{3}{8}, \pm 5, \pm \frac{5}{2}, \pm \frac{5}{4}, \pm \frac{5}{8}, \pm 15, \pm \frac{15}{2}, \pm \frac{15}{4}, \pm \frac{15}{8} \right\}$

23. 1 (double root), $\pm \frac{i\sqrt{5}}{2}$

24. $-\frac{2}{3}, 1 \pm \sqrt{2}$