Graphing Functions Using Critical Values

For each of the following, give
- a. the kind of function
- b. a description of its graph it produces
- c. the critical values for that function
- d. useful sample points
- e. a <u>sketch</u> of the graph

1. $y = 4 + \dfrac{5}{x-2}$

2. $f(x) = -3$

3. $g(x) = |6x - 18|$

4. $y = \sqrt{x-8}$

5. $h(x) = -x + 4$

6. $y = \frac{1}{2}(x-3)^2 - 8$

7. $F(x) = -3(x+2)^2$

8. $G(x) = \dfrac{2}{7}x$

9. $y = |4x - 12| - 10$

10. $y = 7$

11. $H(x) = 4 + \dfrac{5}{(x-2)(x+3)}$

12. $p(x) = -3x^2 + 10$

13. $y = \sqrt{(x-10)(2x+6)} + x$

14. $q(x) = -\dfrac{10}{3}x + 4$

15. $r(x) = |x+3| + 2x$

16. $y = |x-5| + |x+1| + x$

17. $y = -\frac{1}{3}(x+6)^2 + 7$

18. $y = \sqrt{6 - 3x} - 1$

19. $y = \frac{1}{5}(x-5)^2 + 7$

20. $y = -2|x| + x + 2$

21. $y = 3 + \dfrac{10}{(x-2)^2}$

22. $x = -9$

23. $y = -4x^2$

24. $S(x) = \sqrt[3]{x-4}$