Sketch the following curves.

1. $f(x) = x^2 - 3$
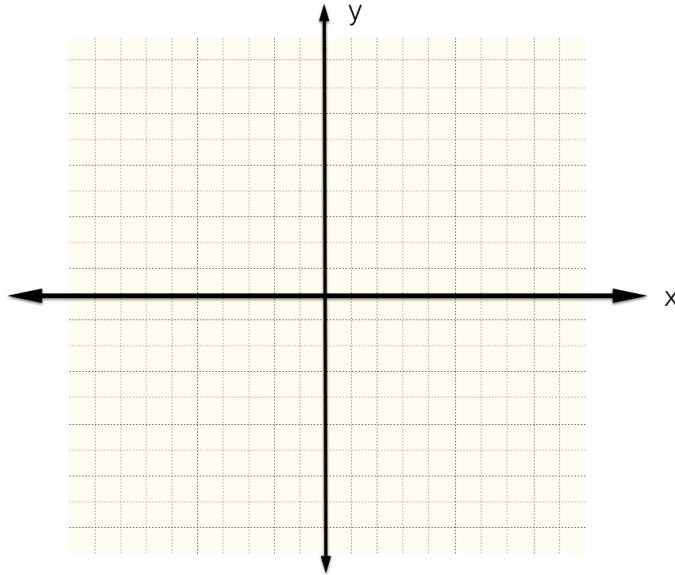
2. $f(x) = -x^3 + 2$
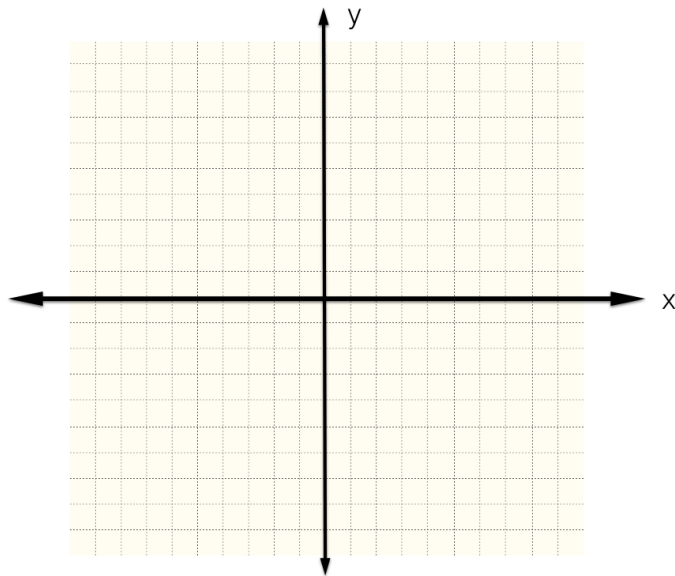
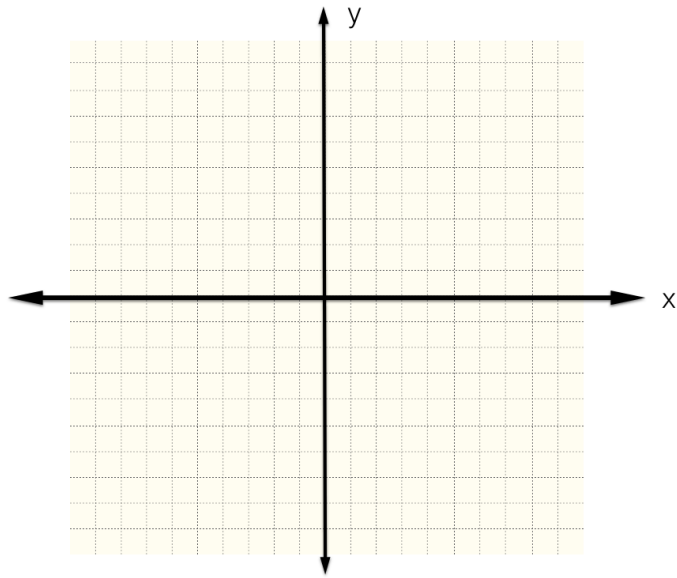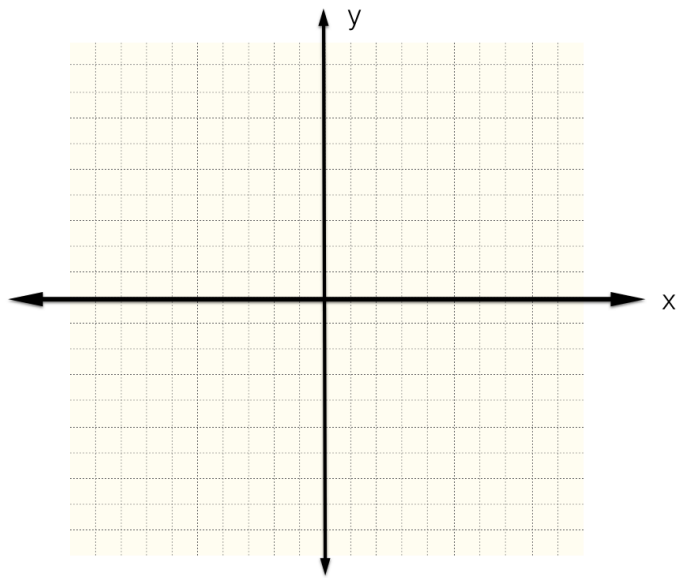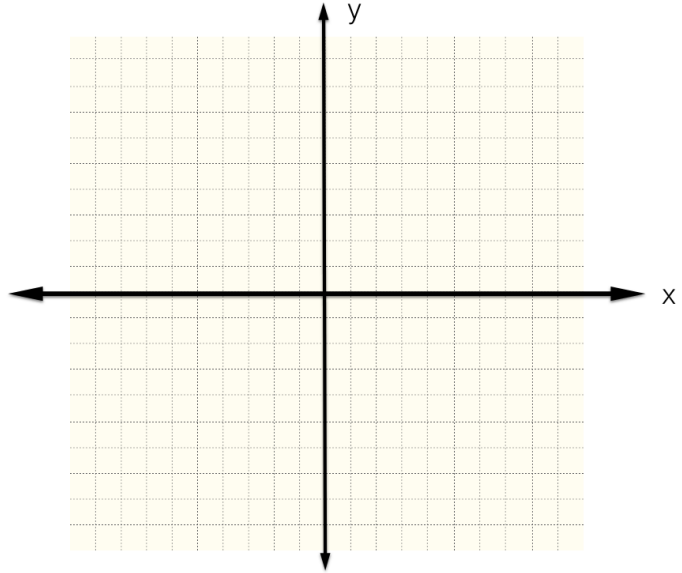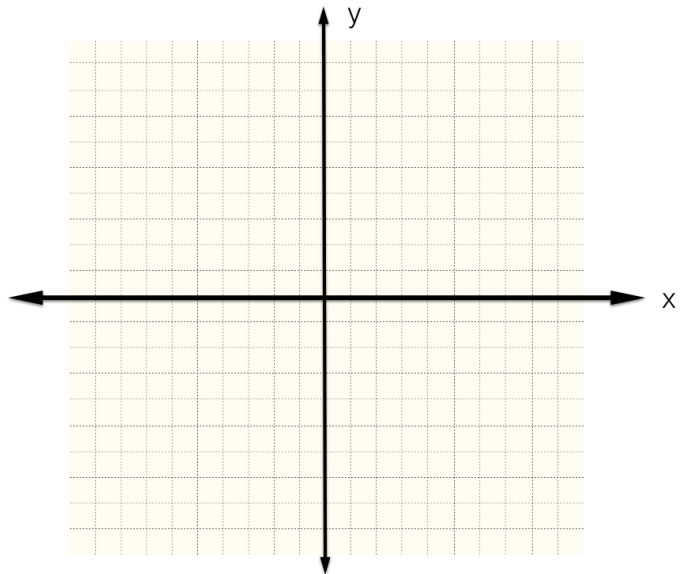3. $f(x) = \sqrt{x-3}$
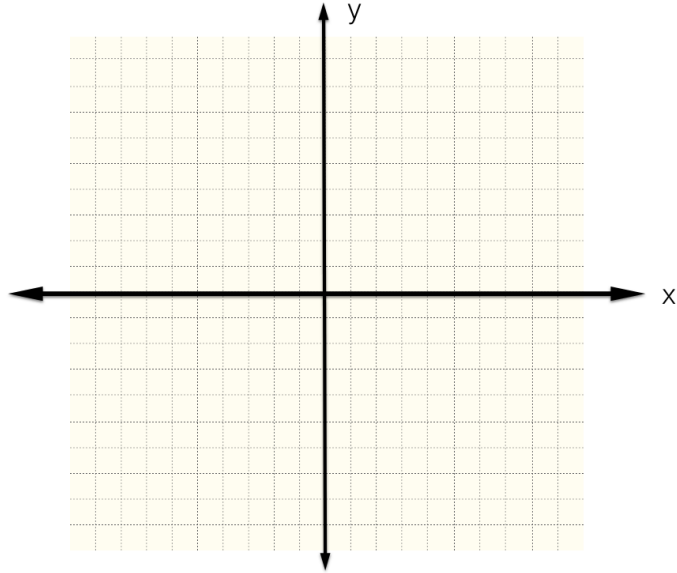
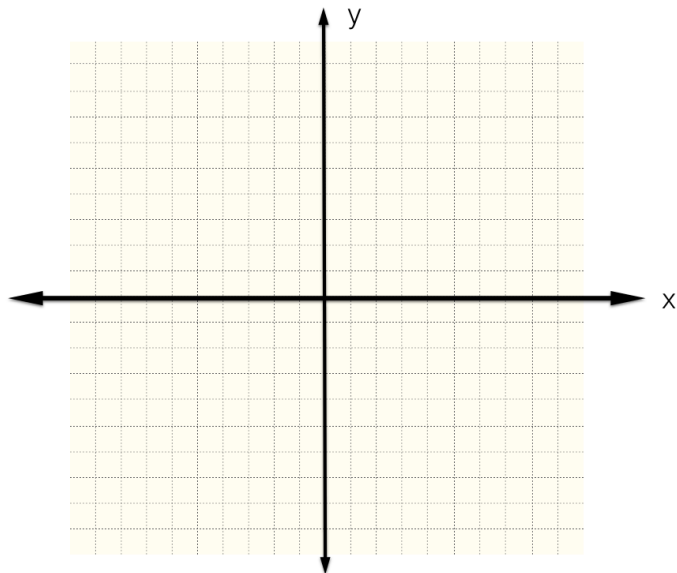4. $f(x) = -\sqrt[3]{x} - 4$

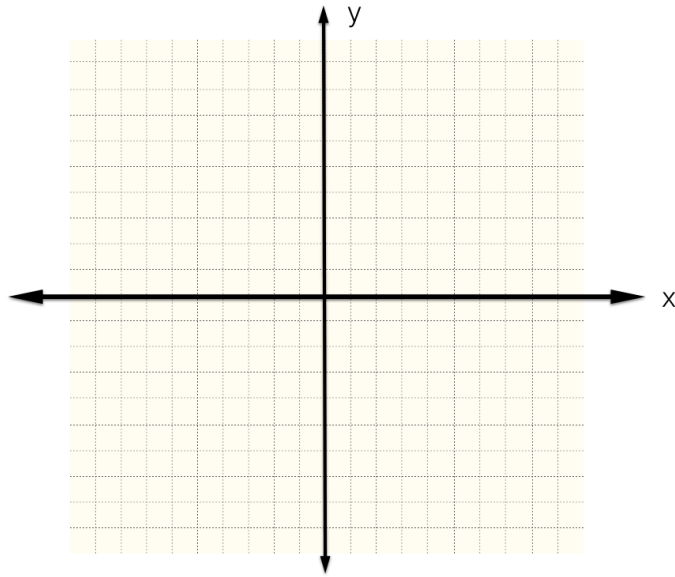5. $f(x) = \frac{1}{x-2} + 4$

6. $f(x) = \frac{1}{(x+5)^2}$

7. $f(x) = -\dfrac{1}{x^2} - 5$

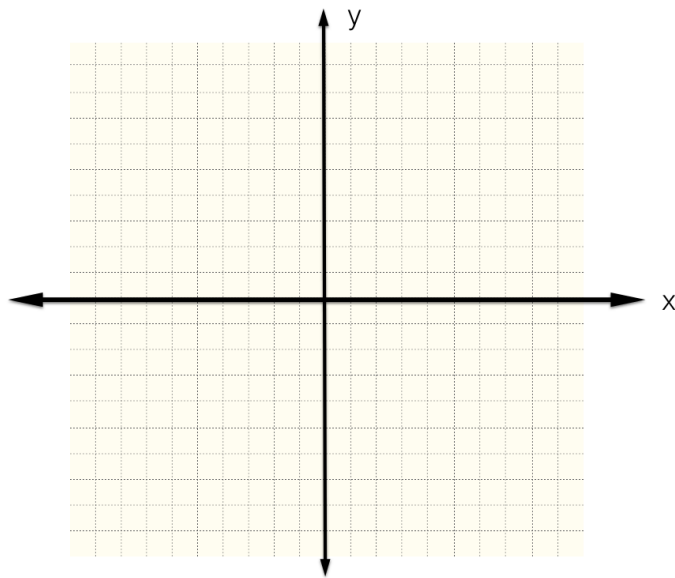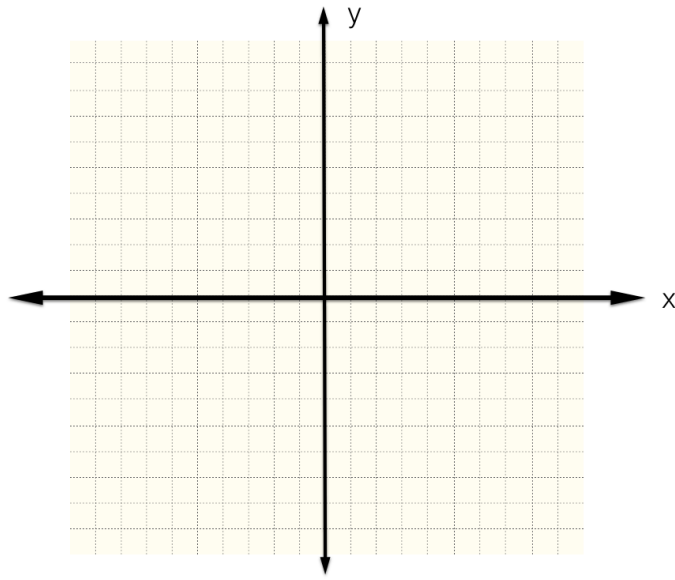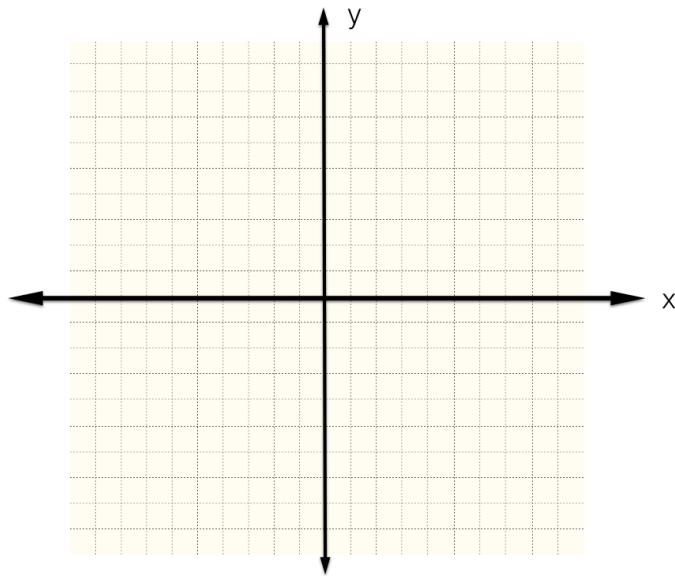8. $f(x) = |x - 4| + 3$

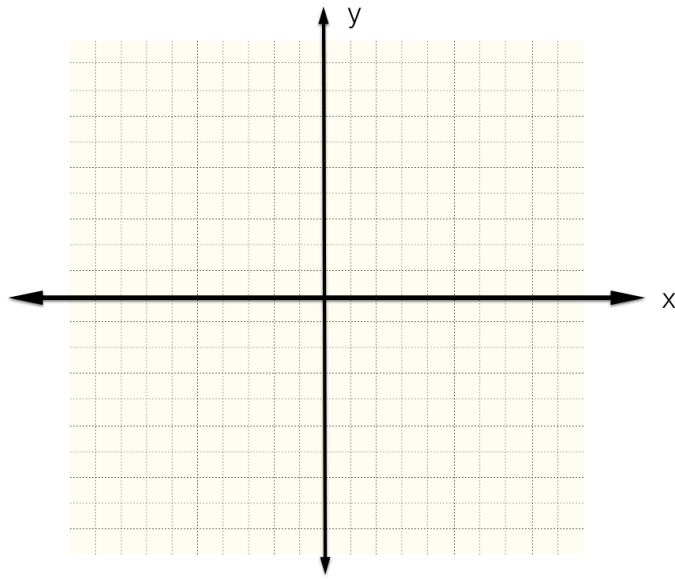9. $f(x) = -|x + 6|$

10. $f(x) = e^{x-3} - 5$
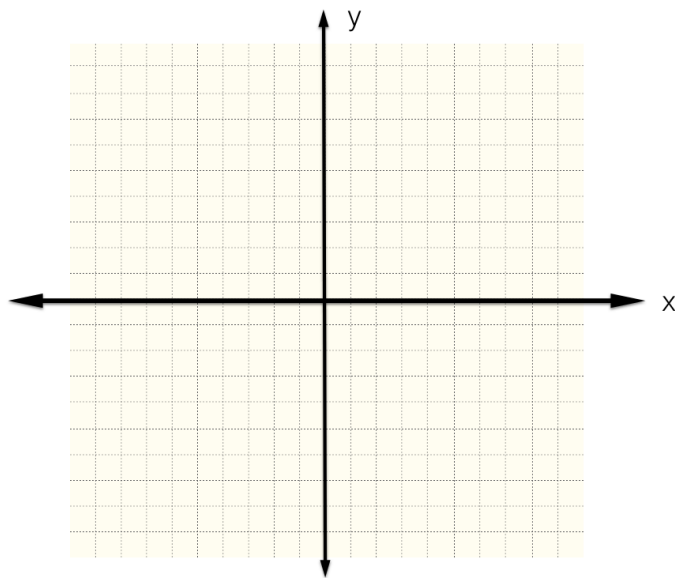
11. $f(x) = \log(x + 4)$

12. $f(x) = -(x + 1)^2 - 3$

13. $f(x) = (x - 2)^3 - 1$

14. $f(x) = -\frac{1}{x+4} + 2$

15. $f(x) = \sqrt{x-1} + 5$
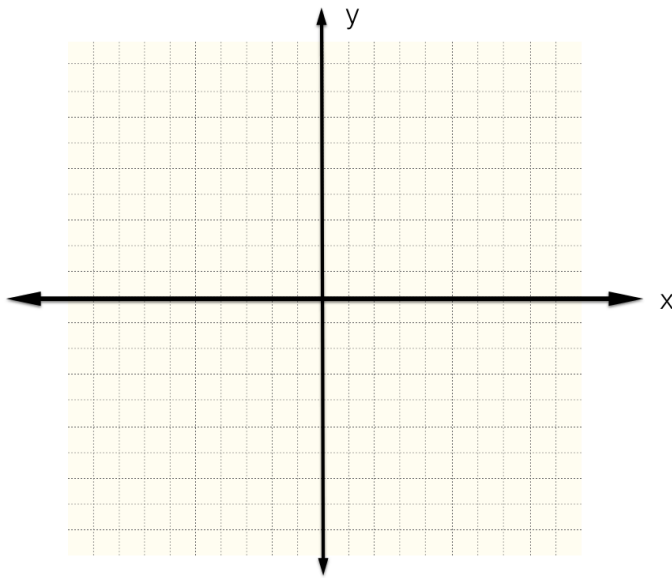
Use synthetic Division to perform each division.

16. $\dfrac{x^4-5x^2+2x-4}{x+5}$

17. $\dfrac{x^5+1}{x+1}$

Use synthetic division to express $f(x)$ in the form $f(x) = (x - k)q(x) + r$ for the given value of k

18. $f(x) = -5x^4 + x^3 + 2x^2 + 3x + 1$ for $k = 1$

19. $f(x) = x^4 - 2x - 3$ for $k = 2$

For each polynomial function, use the Remainder Theorem and synthetic division to determine the value of f(k). Also, indicate whether f(k) is a zero for the function polynomial function.

20. $f(x) = x^3 + 2x^2 - x + 6$ for $k = -3$

21. $f(x) = 3x^4 + 13x^3 - 10x + 8$ for $k = -\dfrac{4}{3}$

Use synthetic division to determine whether $x - k$ is a factor for the polynomial function $f(x)$.

22. $f(x) = -3x^4 + x^3 - 5x^2 + 2x + 4 \,; x - 1$

23. $f(x) = -2x^3 + x^2 - 63 \,; x + 3$

Factor each polynomial function, one zero is given. Determine all the other zeros.

24. $f(x) = x^3 + 4x^2 - 5; 1$

25. $f(x) = x^3 + 5x^2 + 2x - 8; 1$

26. $f(x) = x^3 - x^2 - 10x - 8; -2$

27. $f(x) = 15x^3 + 61x^2 + 2x - 8; -4$

28. What is your name?

Answer Sheet

1	Use Test Sheet Graph	15	Use Test Sheet Graph
2	Use Test Sheet Graph	16	
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