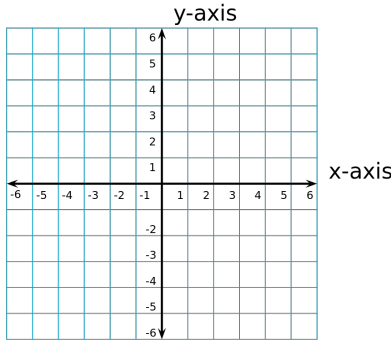


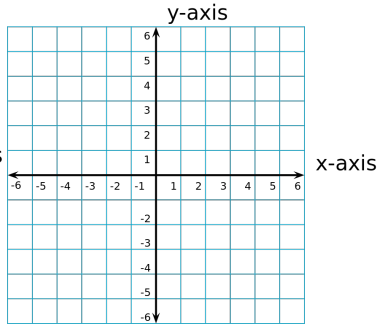
Math 3 Ch 2 Review

Graph the following functions. Clearly label all important points, and have at least 3 plotted points per graph.

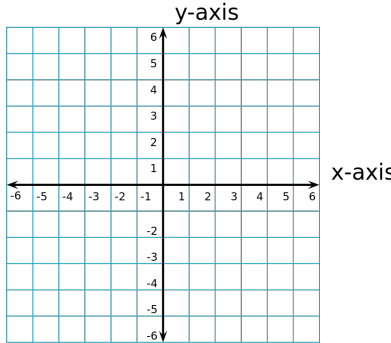
1. $f(x) = \frac{1}{2}|x + 4|$



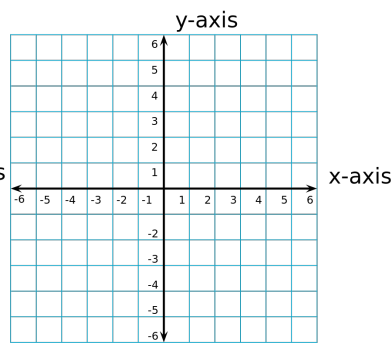
2. $f(x) = 4(x + 3)^2 - 3$



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



4. $f(x) = x^2 - 4x + 2$



5. For the equation in #1, write a function $g(x)$ whose graph represents the transformation of a vertical stretch by a factor of 3 followed by a translation 2 units down.

6. Let the graph of g be a translation 3 units right of the graph of f . The points $(-1, 6)$, $(3, 14)$ and $(6, 41)$ lie on the graph of f . Which points lie on the graph of g ?

- a) $(2, 6)$ b) $(2, 11)$ c) $(6, 14)$ d) $(6, 19)$ e) $(9, 41)$ f) $(9, 46)$

7. A bridge builder plans to construct a cable suspension bridge. The cable being used will form a curve modeled by the equation $h(x) = 3x^2 - 6x + 200$, where x represents the length of cable used in feet and $h(x)$ represents the height of the cable in feet. At what height will the cable hang closest to the bridge deck?

8. Write an equation of the parabola that passes through the point $(2, 5)$ and has x -intercepts -2 & 4 .

Solve the systems of equations

$$\begin{aligned}
 9. \quad & x + y - z = 2 \\
 & x - 2y + z = 8 \\
 & -y + z = 3
 \end{aligned}$$

$$\begin{aligned}
 10. \quad & x + y + 2z = 5 \\
 & x + 2y + z = 8 \\
 & 2x + 3y - z = 1
 \end{aligned}$$

Complete the square to find the vertex or the center and radius. Show all steps.

$$11. \quad x^2 + 2x - y - 1 = 0$$

$$12. \quad 3x^2 - 6x - y + 2 = 0$$

$$13. \quad x^2 - 6x + y^2 + 4y - 3 = 0$$

Use differences to write the equation represented.

14.

| | | | | |
|----|----|---|---|---|
| 0 | 1 | 2 | 3 | 4 |
| -5 | -2 | 1 | 4 | 7 |

15.

| | | | | |
|---|----|----|----|----|
| 4 | 5 | 6 | 7 | 8 |
| 9 | 16 | 25 | 36 | 49 |

16. Before the pandemic, a Major League Baseball team sold 3 types of tickets. Reserved tickets were \$20 each, field-level tickets were \$50 each, and box seats were \$100 each. You purchased 10 total tickets for \$370. You had twice as many reserved tickets as field level tickets. How many of each did you have?