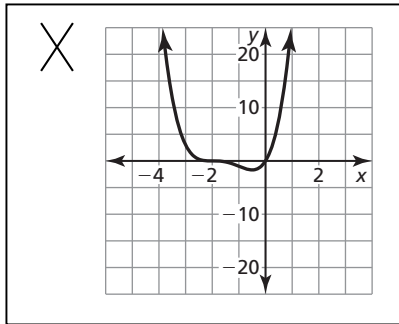


3.8

Practice B

In Exercises 1–4, graph the function.

1. $f(x) = 4(x + 3)^2(x - 2)^2$
2. $g(x) = \frac{1}{2}(x - 4)(x + 3)(x - 6)$
3. $h(x) = \frac{1}{5}(x - 3)(x - 4)(x + 8)$
4. $f(x) = (x - 2)(x^2 + x + 2)$
5. Describe and correct the error in using factors to graph $f(x) = x^2(x + 2)^3$.



In Exercises 6–9, find all real zeros of the function.

6. $f(x) = 2x^3 - x^2 + 8x - 4$
7. $f(x) = 2x^3 + 7x^2 + x - 10$
8. $f(x) = 4x^3 - 3x^2 - 36x + 27$
9. $f(x) = 2x^3 + 3x^2 + 10x + 15$

In Exercises 10–13, graph the function. Identify the x -intercepts and the points where the local maximums and local minimums occur. Determine the intervals for which the function is increasing and decreasing.

10. $f(x) = 0.5x^3 - 3x^2 + 1.5$
11. $g(x) = 0.4x^3 - 3x$
12. $h(x) = x^5 - 3x^2 - 9x - 2$
13. $f(x) = x^4 - 3x^3 + 3x^2 + x - 2$

14. You are making a rectangular box out of a 12-inch by 8-inch piece of cardboard. The box will be formed by making the cuts shown in the diagram and folding up the sides. You want the box to have the greatest volume possible.

- a. How long should you make the cuts?
- b. What is the maximum volume?
- c. What are the dimensions of the finished box?

