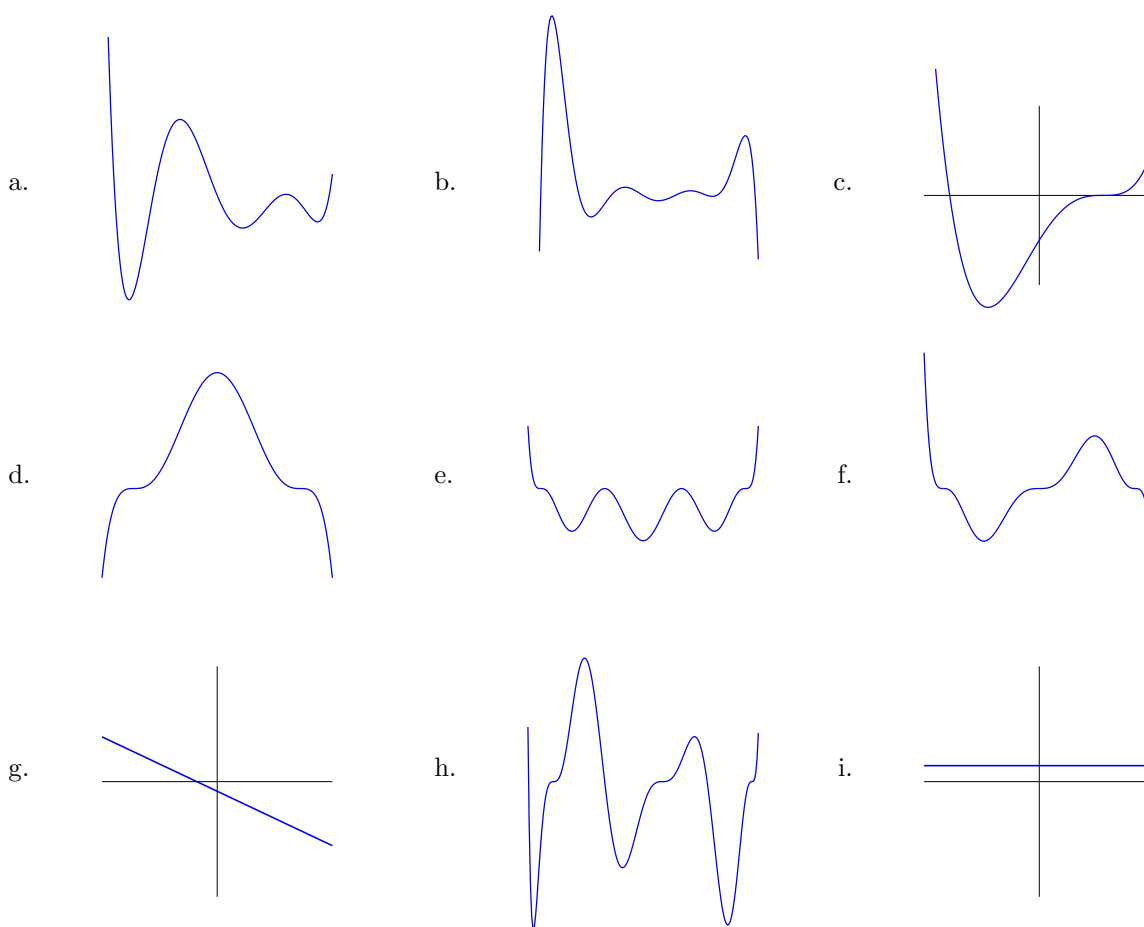


More problems for section 3.1 of *Essentials of Precalculus with Calculus Previews* by Zill and Dewar, 6e.

1. Make a rough sketch of the following functions **by hand**. Check your work by graphing the functions on a graphing calculator.

- |                                       |                                       |
|---------------------------------------|---------------------------------------|
| a. $-2(x+1)^2(x+2)(x-1)(x-3)^2$       | b. $2(x+2)(x+3)^3(x-1)^2(x-4)$        |
| c. $3(x-3)^3(x-1)^3(x+1)(x+3)$        | d. $-(x+5)^3(x+2)^4(x+1)^3(x-1)^5$    |
| e. $-(x+1)^2(x+2)^2(x-1)^2(x-2)(x-4)$ | f. $-2(x+4)^3(x+2)(x+1)^3x(x-3)$      |
| g. $7(x+1)(x+2)(x-3)(x-4)(x-1)$       | h. $2x(x-1)^3(x-3)^3(x+4)^3(x-5)^2$   |
| i. $-2(x+4)^2(x+3)(x+2)(x^2-1)$       | j. $-(x-2)(x+3)^3(x+1)^5(x^2-4x+3)$   |
| k. $x^3(x+5)(x-3)(x^2-x-12)^2$        | l. $7(x-2)^2(x+1)^3(x-3)^5(x+1)(x-4)$ |

2. What can you conclude about the degrees of the polynomials graphed below? Remember that there may be more to the graph offscreen.



Answers

- 2a. deg  $\geq 6$    2b. deg  $\geq 8$    2c. deg  $\geq 4$    2d. deg  $\geq 6$    2e. deg  $\geq 10$    2f. deg  $\geq 9$    2g. deg = 1   2h. deg  $\geq 12$    2i. deg = 0