■PROPERTIES
In 1–8, answer *true* or *false*.

1. The polynomial $f(x) = x^2 + 49$ has at least one real zero. _____

2. A polynomial of degree 6 has at most 6 real zeros. _____

3. A fourth-degree polynomial can have 4 real zeros and 2 complex zeros, as long as they are conjugates. _____

4. A quadratic polynomial can have one complex zero. _____

5. A fifth-degree polynomial can have 4 distinct real roots, as long as one of these has multiplicity 2. _____

6. If $3 - 2i$ is a zero of a polynomial $f(x)$ with real coefficients, then $3 + 2i$ is a zero of $f(x)$. _____

7. A polynomial of degree n has at most $n - 1$ real zeros. _____

8. A polynomial with roots 2, $\sqrt{3}$, and -4 can have degree no higher than 3. _____

9. It is possible for the graph of a third-degree polynomial with real coefficients to intersect the line $y = -5$ exactly twice. _____

10. If $2 - 3i$ is a zero of $x^3 - 3x^2 + 9x + 13$, then $3 - 2i$ cannot be another zero of it. _____

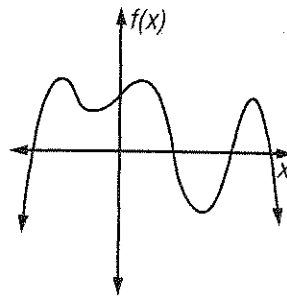**■PROPERTIES** *Objective K*
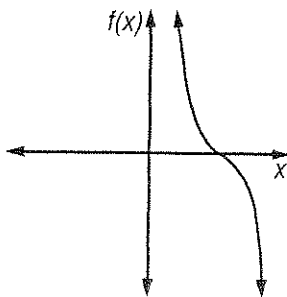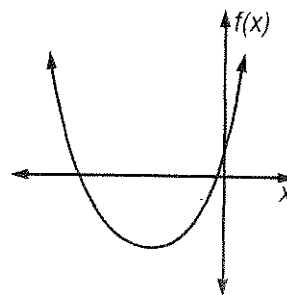In 9–12, write the numeral of each graph that could fit the given information.
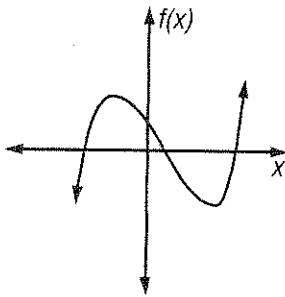
9. quadratic _____ 10. 3 real zeros _____

11. 1 real zero, multiplicity 3 _____ 12. 4 real zeros _____