

Name:

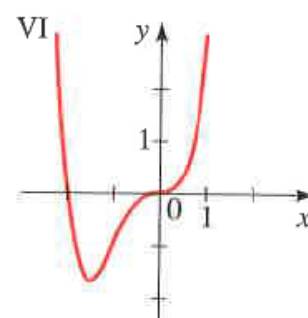
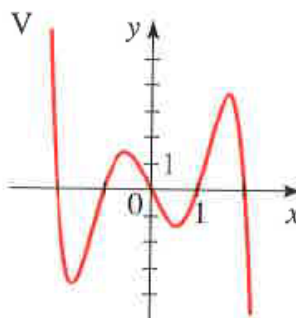
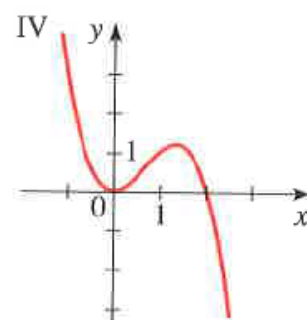
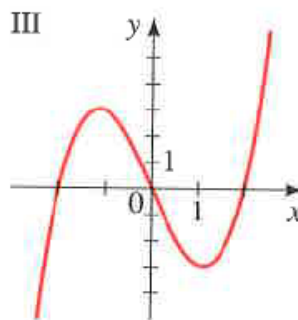
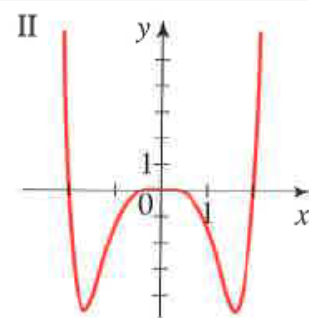
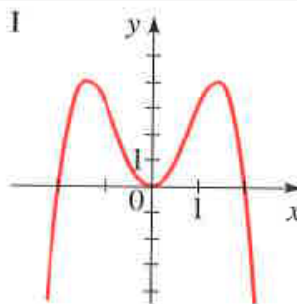
Polynomial Behavior #5-10 all and 23, 25, 29, 33, 35

5-10 ■ Match the polynomial function with one of the graphs I-VI. Give reasons for your choice.

5. $P(x) = x(x^2 - 4)$ III 6. $Q(x) = -x^2(x^2 - 4)$ I

7. $R(x) = -x^5 + 5x^3 - 4x$ V 8. $S(x) = \frac{1}{2}x^6 - 2x^4$ II

9. $T(x) = x^4 + 2x^3$ VI 10. $U(x) = -x^3 + 2x^2$ IV

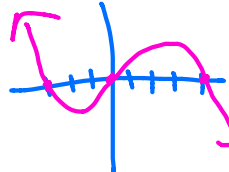


23-36 ■ Factor the polynomial and use the factored form to find the zeros. Then sketch the graph.

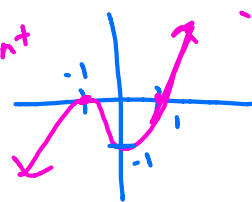
23. $P(x) = x^3 - x^2 - 6x$
 $x(x-3)(x+2)$



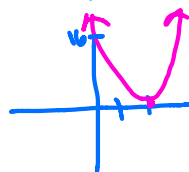
25. $P(x) = -x^3 + x^2 + 12x$
 $-x(x-4)(x+3)$



29. $P(x) = x^3 + x^2 - x$ 1
 $(x+1)(x-1)(x+1)$ y-int
 $(x+1)^2(x-1)$
 Zeros: -1, 1
 Mult: 2, 1



33. $P(x) = x^4 - 2x^3 - 8x + 16$
 $(x-2)(x^2+2x+4)(x-2)$



35. $P(x) = x^4 - 3x^2 - 4$
 $(x+2)(x-2)(x^2+1)$

