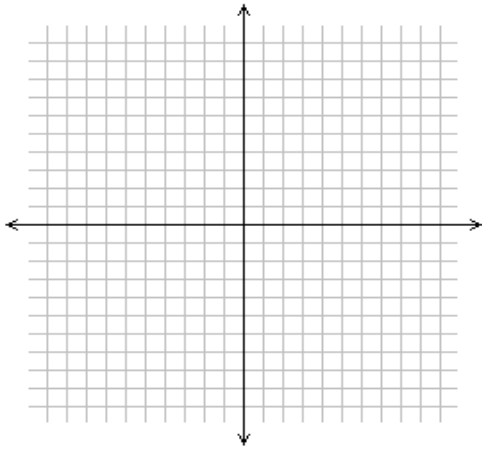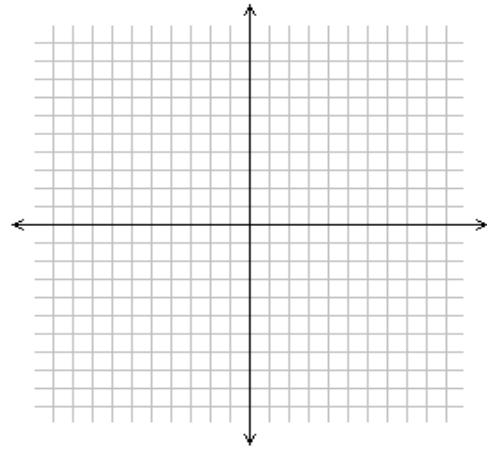**Make a rough sketch of the graph using end behavior, zeros, and multiplicity to make it as accurate as possible.**
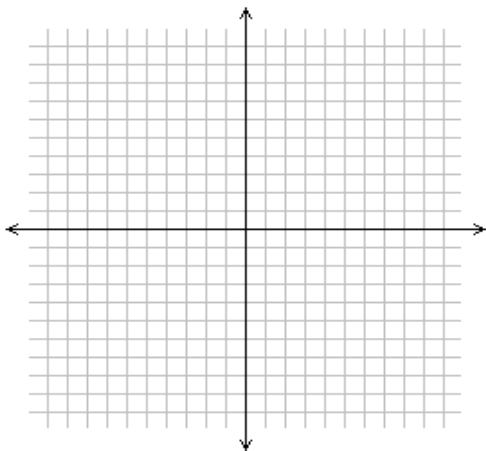
17) $f(x) = -x^2 + 2x + 3$
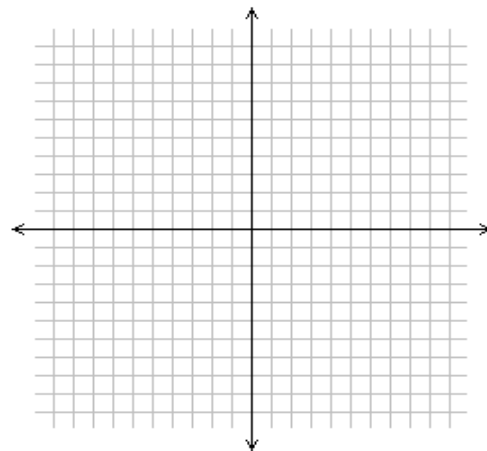$f(x) = -(x+1)(x-3)$
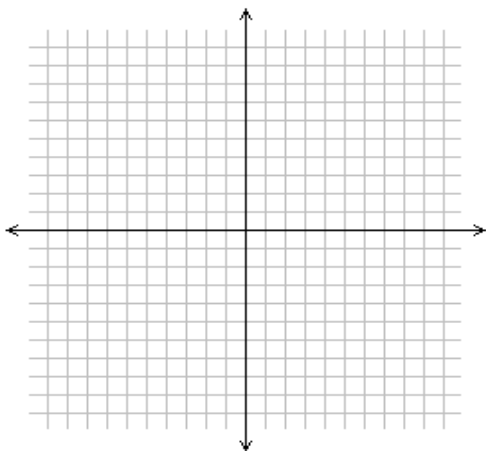
18) $f(x) = x^2 - 10x + 25$
$f(x) = (x-5)^2$
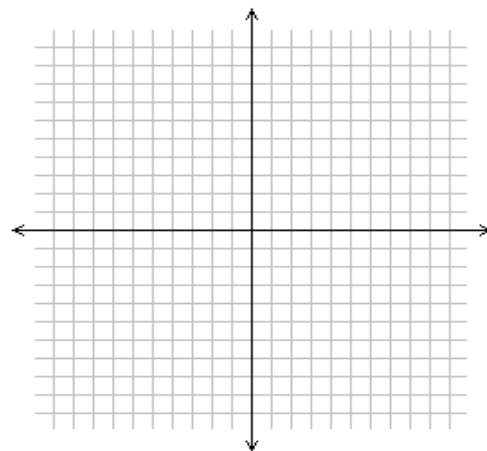
19) $f(x) = x^3 + x^2 - 30x$
$f(x) = x(x+6)(x-5)$

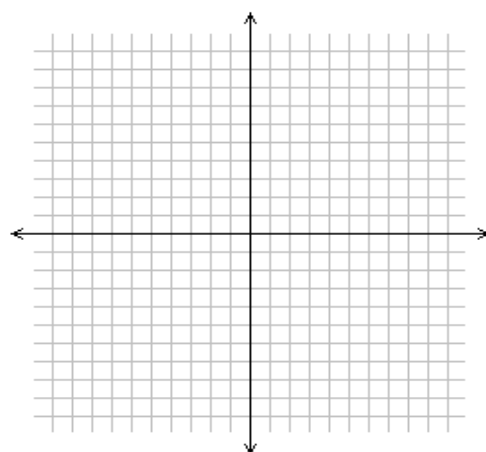**20)** $f(x) = -x^4 - x^3 + 30x^2$
$f(x) = -x^2(x+6)(x-5)$

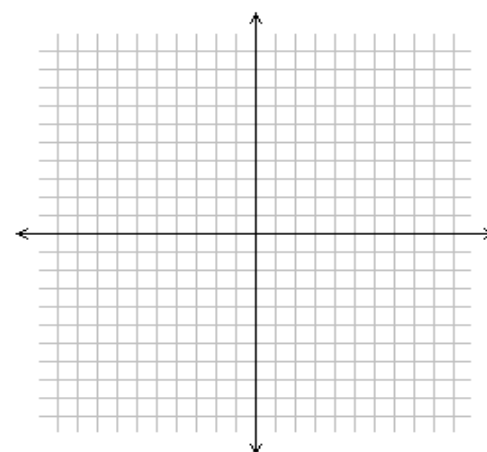**21)** $f(x) = -x^4 - x^3 + 40x^2 + 112x$
$f(x) = -x(x+4)^2(x-7)$
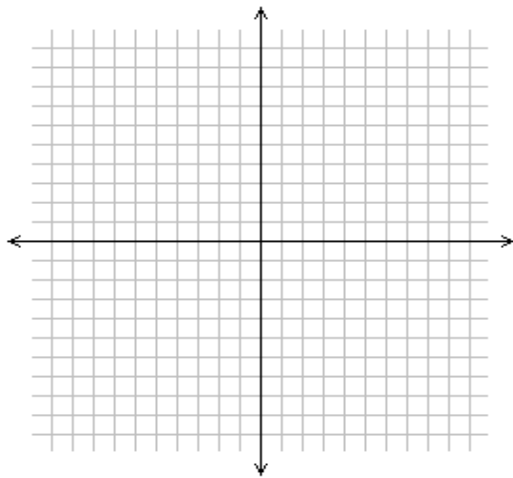
22) $f(x) = x^5 + 8x^4 + 16x^2$
$f(x) = x^3(x+4)^2$

23) $f(x) = x^4 - x^3 - 21x^2 + 45x$
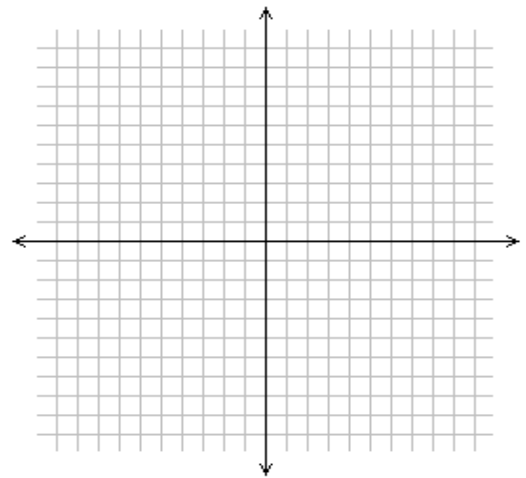$f(x) = x(x+5)(x-3)^2$

24) $f(x) = x^3 - 3x^2 - 9x - 5$
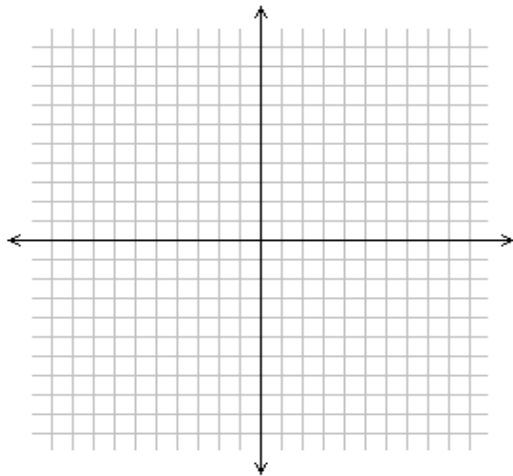$f(x) = (x+1)^2(x-5)$

25) $f(x) = -x^5 + 9x^4 - 27x^3 + 27x^2$
$f(x) = -x^2(x - 3)^3$

26) $f(x) = x^4 + 3x^3 - 28x^2$
$f(x) = x^2(x + 7)(x - 4)$

27) $f(x) = -x^4 - 2x^3 + 20x^2 - 24x$
$f(x) = -x(x - 2)^2(x + 6)$

28) $f(x) = -x^2 + 1$
$f(x) = -(x + 1)(x - 1)$