Name: _____

Zeros of Polynomial Functions

1) Construct a polynomial with the following roots

   1) $10, -3$
   2) $1, 0, -2$
   3) $-\frac{1}{3}, 0, 5, 4$
   4) $\frac{1}{2}, -4$
   5) $\sqrt{2}, -\sqrt{2}$

2) Find a polynomial function with integer coefficients that has the given zeros

   1) $1\ ,\ 5i\ \ ,\ -5i$
   2) $6\ ,\ -5+2i$
   3) $4\ ,\ 3i\ \ ,\ -3i$
   4) $2\ ,\ 4+i$
   5) $\frac{2}{3}\ ,\ -1\ ,\ 3+\sqrt{2}i$

3) Find the quadratic function whose roots are $-1\ and\ \frac{1}{3}$ and whose value at x=2 is 10

4) Find the polynomial of degree 3 which has a root at -1, a double root at 3 and whose value at x=2 is 12

5) Find the quadratic whose roots are -3 and $\frac{1}{5}$ and whose value at x=0 is -3

6) Find the polynomial of degree 3 which has roots at $x=1, x=1+\sqrt{2}\ \ and\ \ x=1-\sqrt{2}$, and whose value at x=2 is -2