

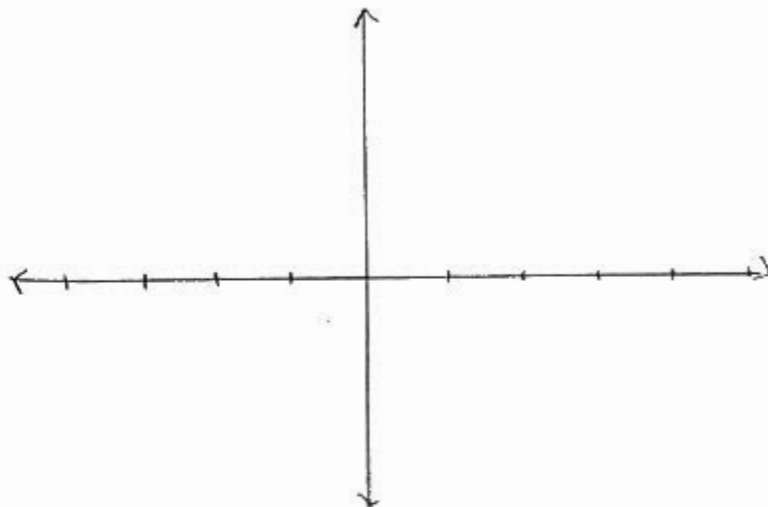
1. Find all values of x where $f(x)=0$, $f(x)>0$, and $f(x)<0$. Sketch the graph.

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

$$f(x) = 0: \underline{\hspace{2cm}}$$

$$f(x) > 0: \underline{\hspace{2cm}}$$

$$f(x) < 0: \underline{\hspace{2cm}}$$



2. Use the Remainder Theorem to find $f(c)$.

$$f(x) = x^4 - 10x^3 - 2x + 4, c = -5$$

3. Determine if $x-2$ is a factor.

$$f(x) = 2x^4 + 7x^3 - 4x^2 - 27x + 18$$

4. Find the zeros and state their multiplicity.

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

5. Find the polynomial with zeros 3,4, and 0, and satisfying $f(-2)=20$.