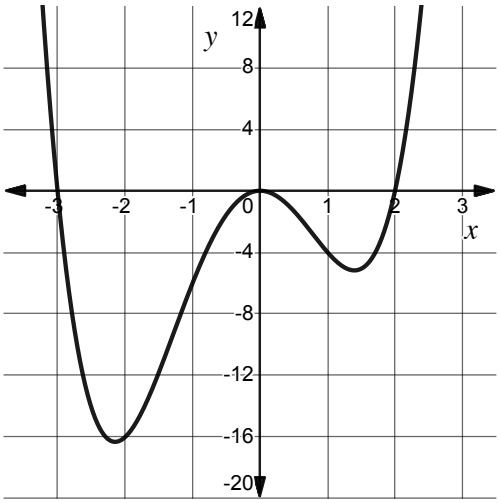
Name _____

HW L2.2

1. Let $g(x) = 3(x-2)^2(x+4)(x-10)^3$. Find the zeros of g and state their multiplicity.

2. Let $f(x) = x^2 - 10x + 26$. Find all solutions to the equation $f(x) = 0$.

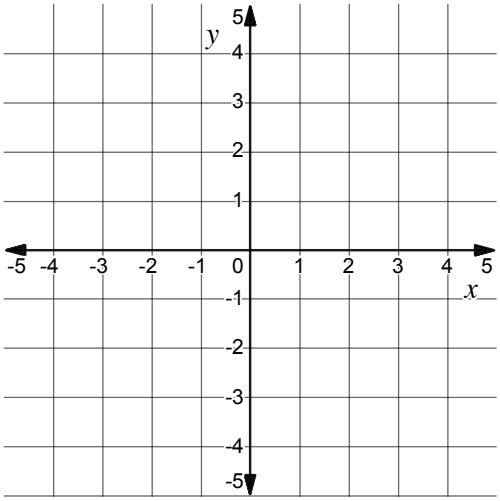
3. The graph of a quartic function f is shown on the xy-coordinate plane. Write an equation for f.



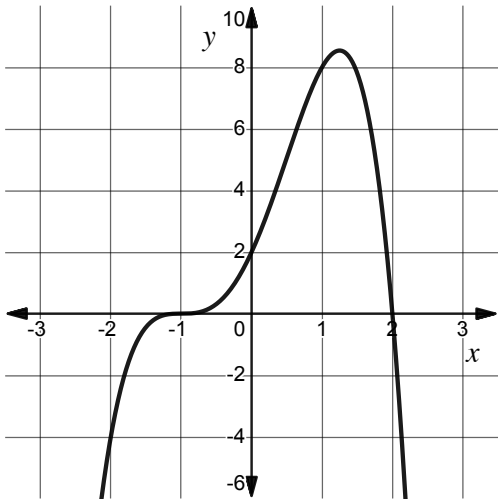
MATH MEDIC

4. The function g has a zero at $x = 3$ with multiplicity 3, a zero at $x = -1$ with multiplicity 2, and a zero at $x = -4$ with multiplicity 1.

   Sketch a possible graph of $y = g(x)$.



5. The graph of a function g is shown. It is known that g has only real zeros.



   a. Identify the least degree of g.

   b. How many turning points does g have?

   c. State the zeros of g and their multiplicity.

   d. Write the equation for $g(x)$ in intercept form.

   e. Find one oher ordered pair on the graph of g that is neither an x -, nor a y -intercept.

6. Use technology to look at the graph of $f(x) = -x^5 + 10x^4 - 12x^3 + 14x^2 - 7x - 3$. Then determine the number of real and imaginary zeros of f.

7. Let $h(x) = (x^2 - 7x + 6)(x^2 + 6x + 13)$.

   a. Identify the number of real and imaginary zeros of h.

   b. Write an equation for $h(x)$ in fully factored form.

8. Write the equation of a polynomial function f with zeros at $x = 4i$ and $x = -7 + \sqrt{2}$.