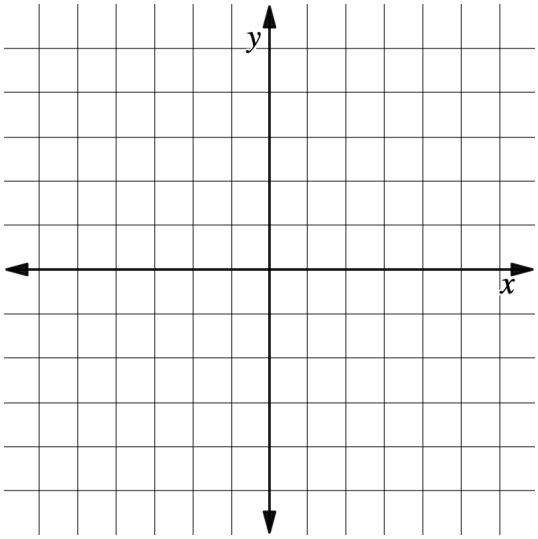
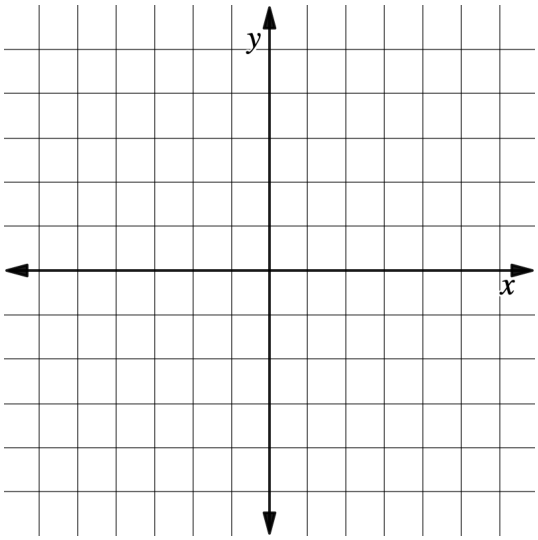
Graphing Polynomials Task Name: _____

| Question 1: | Question 2: |
|---|---|
| $f(x) = (x+3)(x-1)^2(x-4)$ | $f(x) = -\frac{1}{2}(x^2+4)(x-3)$ |
| Degree: | Degree: |
| Leading Coefficient: | Leading Coefficient: |
| End Behavior:<br>$\lim_{x\to\infty} f(x) =$<br>$\lim_{x\to-\infty} f(x) =$ | End Behavior:<br>$\lim_{x\to\infty} f(x) =$<br>$\lim_{x\to-\infty} f(x) =$ |
| Y-intercept: | Y-intercept: |
| Zeros and multiplicity: | Zeros and multiplicity: |
| Find one other ordered pair on the graph: | Find one other ordered pair on the graph: |
| Sketch a graph of $f$. Choose an appropriate scale.<br>  | Sketch a graph of $f$. Choose an appropriate scale.<br>  |

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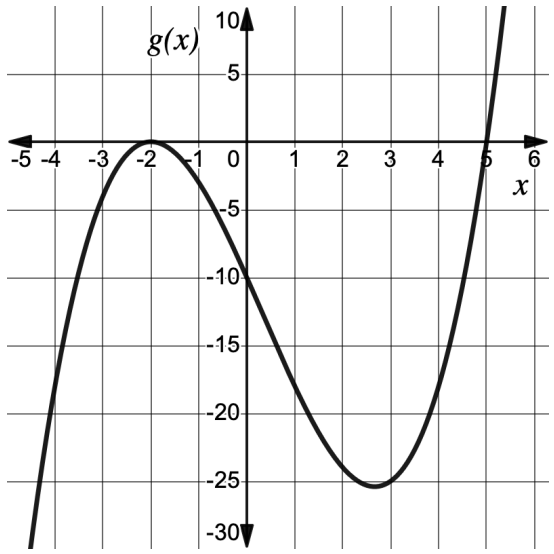
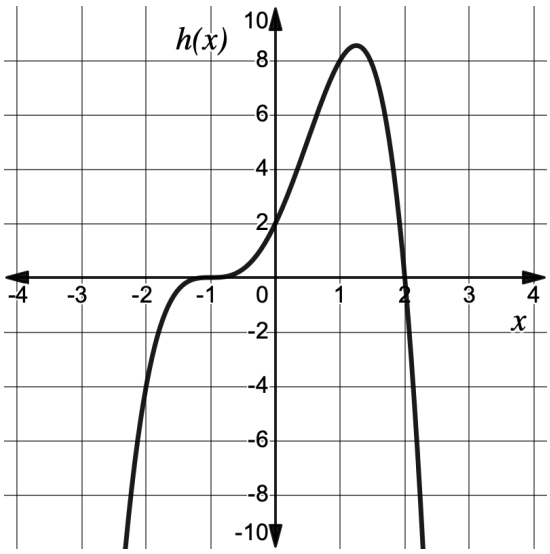
| Question 3: | Question 4: |
|---|---|
|  |  |
| Y-intercept: | Y-intercept: |
| Zeros and multiplicity: | Zeros and multiplicity: |
| End Behavior:<br>$\lim_{x\to\infty} g(x) =$<br>$\lim_{x\to-\infty} g(x) =$ | End Behavior:<br>$\lim_{x\to\infty} h(x) =$<br>$\lim_{x\to-\infty} h(x) =$ |
| Degree: | Degree: |
| Leading coefficient: | Leading coefficient: |
| Equation for $g(x)$ in intercept form: | Equation for $h(x)$ in intercept form: |
| **Challenge!** Equation for $g(x)$ in standard form: | **Challenge!** Equation for $h(x)$ in standard form: |