

YOUR NAME: _____

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Read each problem **very carefully** before starting to solve it and do only what is asked. Each problem is worth around 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. **GOOD LUCK!!**

1. [6 points] Consider the function $f(x) = \frac{1}{9}(x - 3)^2(x - 1)(x + 2)^2$.

(a) Give its leading term and describe its end behavior.

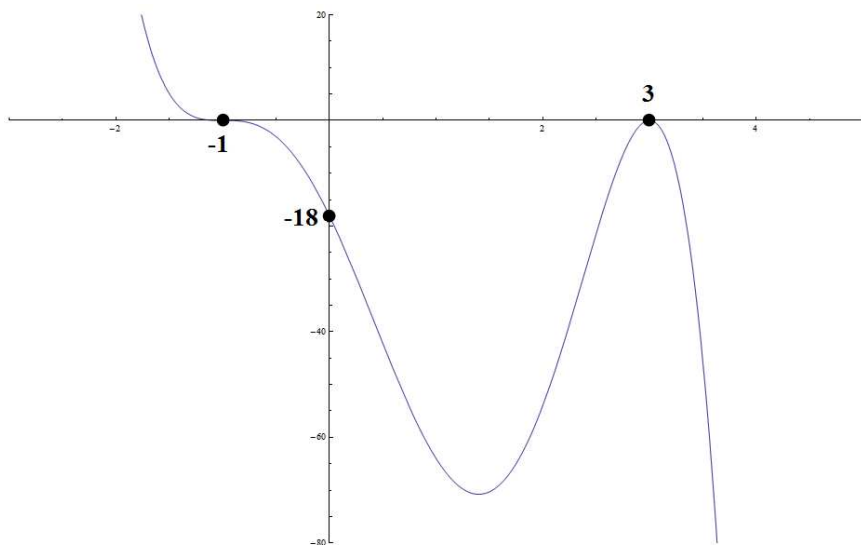
(b) Find the y -intercept.

(c) Give the x -intercepts and accompanying multiplicities.

intercept				
multiplicity				

(d) Roughly sketch the graph of $y = f(x)$ (do the best you can).

2. [6 points] Consider the function $y = f(x)$ whose graph is shown.



(a) Describe the end behavior.

(b) Find the y -intercept.

(c) Give the x -intercepts and accompanying multiplicities.

intercept			
multiplicity			

(d) Provide a possible formula for $f(x)$ (please, show all steps clearly).