

Quiz 3

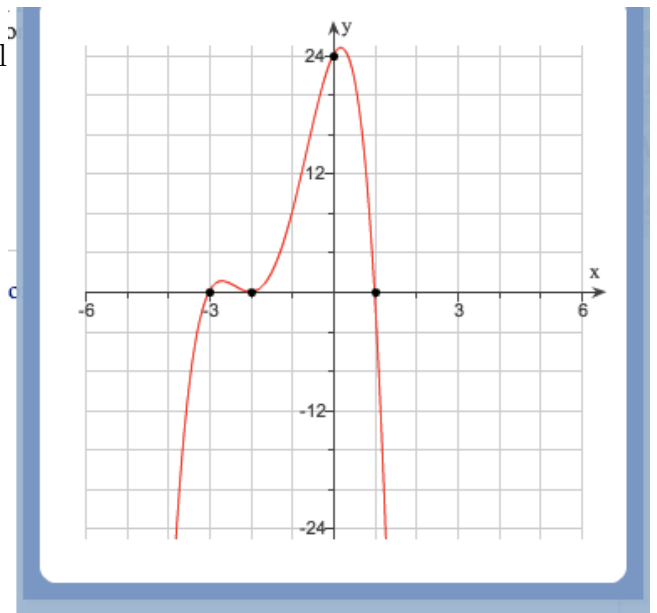
Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

1. [2] (WebHW6 #2 & exponential wks #1) TRUE/FALSE: Circle T in each of the following cases if the statement is *always* true. Otherwise, circle F.

T F $f(x) = \frac{3x^6 + 5x^4}{7}$ is a polynomial.

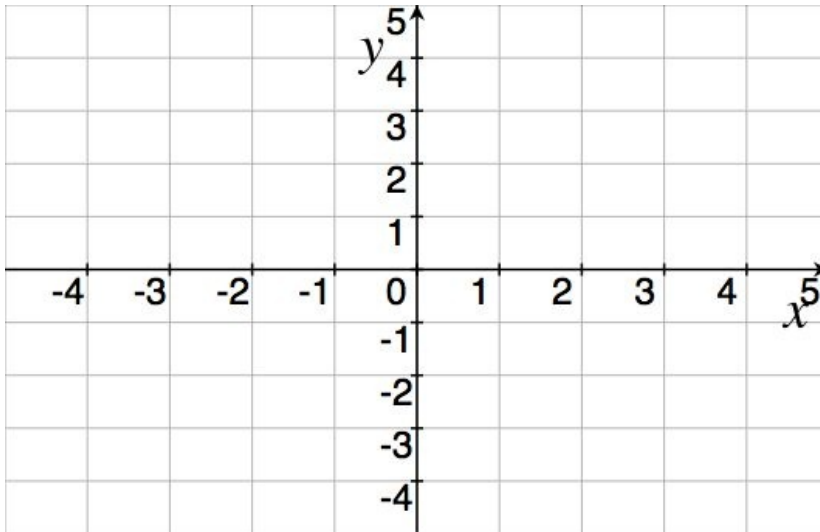
T F $x^5 \cdot x^2 = x^{10}$.

2. [3] (WebHW6 #18) The graph of a polynomial function p is given. Assume that when p is completely factored, each real zero, c corresponds to a factor of the form $(x - c)^m$. Find the equation of least degree for p .



3. [3] (WebHW7 #15 & 22) Carefully graph h on the axes provided where h is the piecewise defined function:

$$h(x) = \begin{cases} 3^{x+1} & \text{if } -3 \leq x < 0 \\ \log_2(x) & \text{if } 0 \leq x < 5 \end{cases}$$



4. [2] Determine if $x + 3$ is a factor of the function $y = 2x^3 - 9x + 5$. Provide justification.