Fri Apr 4 16:44:25 MDT 2008 /m170.sp08/handouts170/AbsoluteExtremes404/AbsoluteExtremes404 Assignment #27

Pencils and Erasers Only – No Calculators Needed – No Decimal Points in Answers!.

1 For each of the following, use algebra and calculus to determine the absolute extreme points of the given function on the given interval. Be sure to give both coordinates of each absolute extreme point.

(a) $\boldsymbol{f(x) = (x+2)^2(x-4)}$ on $\boldsymbol{[0,\ 3]}$

(b) $\boldsymbol{f(x) = (x-2)^2(x+4)}$ on $\boldsymbol{[-3,\ 3]}$

(c) $\boldsymbol{f(x) = x^3 + 3x^2 - 45x + 7}$ on $\boldsymbol{[-4,\ 4]}$

2 Use algebra and calculus to find the absolute extreme points of $\boldsymbol{f(x) = \dfrac{x^2 - x + 3}{x + 2}}$ on $\boldsymbol{[0,\ 3]}$. Be sure to give both coordinates of each absolute extreme point.

3 Use algebra and calculus to find all the local extreme points of $\boldsymbol{f(x) = \dfrac{x^2 - x + 3}{x + 2}}$**.** Be sure to give both coordinates of each local extreme point.

4 Use algebra and calculus to find all the local extreme points of $\boldsymbol{f(x) = 3x^5 - 20x^3 + 10}$**.** Be sure to give both coordinates of each local extreme point.

5 Use algebra and calculus to find all the local extreme points of $\boldsymbol{f(x) = e^{4x}(4x - 9)}$**.** Be sure to give both coordinates of each local extreme point.