

Name: _____ Score: _____

Teacher: _____ Date: _____

Finding absolute extrema

For questions 1 – 12 determine the absolute extrema of the given function on the specified interval.

1. $f(x) = 8x^3 + 81x^2 - 42x - 8$ on $[-8, 2]$

2. $f(x) = 8x^3 + 81x^2 - 42x - 8$ on $[-4, 2]$

3. $R(t) = 1 + 80t^3 + 5t^4 - 2t^5$ on $[-4.5, 4]$

4. $R(t) = 1 + 80t^3 + 5t^4 - 2t^5$ on $[0, 7]$

5. $h(z) = 4z^3 - 3z^2 + 9z + 12$ on $[-2, 1]$

6. $g(x) = 3x^4 - 26x^3 + 60x^2 - 11$ on $[1, 5]$

7. $Q(x) = (2 - 8x)^4(x^2 - 9)^3$ on $[-3, 3]$

8. $h(w) = 2w^3(w + 2)^5$ on $\left[-\frac{5}{2}, \frac{1}{2}\right]$

9. $f(z) = \frac{z + 4}{2z^2 + z + 8}$ on $[-10, 0]$

10. $A(t) = t^2(10 - t)^{\frac{2}{3}}$ on $[2, 10.5]$

11. $f(y) = \sin\left(\frac{y}{3}\right) + \frac{2y}{9}$ on $[-10, 15]$

12. $g(w) = e^{w^3 - 2w^2 - 7w}$ on $\left[-\frac{1}{2}, \frac{5}{2}\right]$