Name_____

Assignment: Maxima and minima

Date_____

For each problem, find all points of relative minima and maxima.

1) $f(x) = (5x - 25)^{\frac{2}{3}}$

2) $f(x) = -(7x - 7)^{\frac{2}{3}}$

3) $f(x) = (-x + 6)^{\frac{2}{3}}$

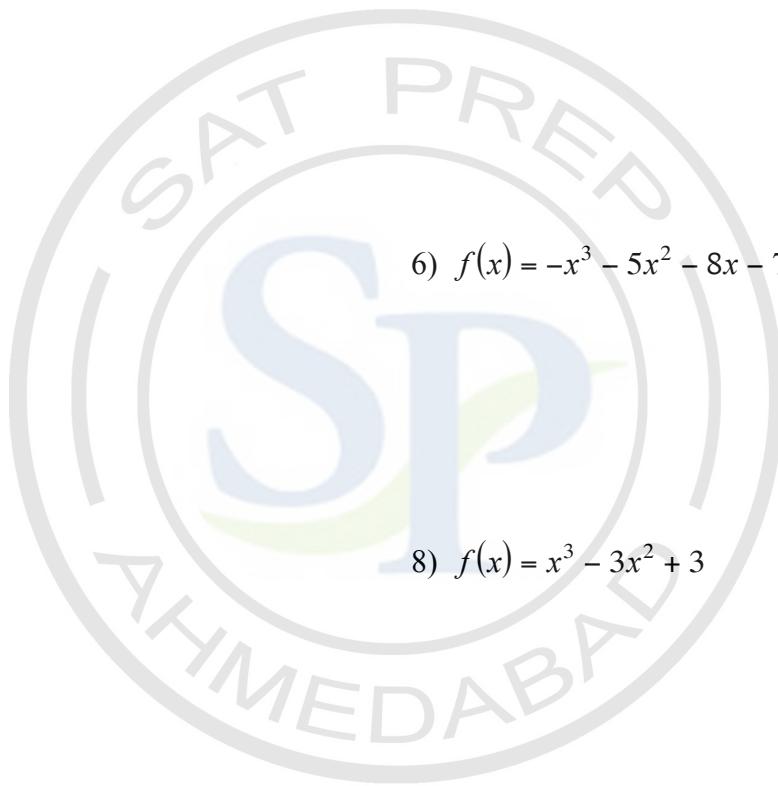4) $f(x) = -\dfrac{3}{x^2 - 9}$

5) $f(x) = x^3 - x^2$

6) $f(x) = -x^3 - 5x^2 - 8x - 7$

7) $f(x) = (2x - 12)^{\frac{2}{3}}$

8) $f(x) = x^3 - 3x^2 + 3$

9) $y = \dfrac{3}{x^2 - 1}$

10) $y = -\dfrac{2}{x^2 - 4}$

Answers to Assignment: Maxima and minima

1) Relative minimum: $(5, 0)$
No relative maxima.

2) No relative minima.
Relative maximum: $(1, 0)$

3) Relative minimum: $(6, 0)$
No relative maxima.

4) Relative minimum: $\left(0, \dfrac{1}{3}\right)$
No relative maxima.

5) Relative minimum: $\left(\dfrac{2}{3}, -\dfrac{4}{27}\right)$
Relative maximum: $(0, 0)$

6) Relative minimum: $(-2, -3)$
Relative maximum: $\left(-\dfrac{4}{3}, -\dfrac{77}{27}\right)$

7) Relative minimum: $(6, 0)$
No relative maxima.

8) Relative minimum: $(2, -1)$
Relative maximum: $(0, 3)$

9) No relative minima.
Relative maximum: $(0, -3)$

10) Relative minimum: $\left(0, \dfrac{1}{2}\right)$
No relative maxima.