

Please show **all** your work! Answers without supporting work will not be given credit.
Write answers in spaces provided.

Name: _____

1. [10 pts] Given the information in the table below, find and classify any critical points for the function $g(x, y)$.

(x_0, y_0)	$g(x_0, y_0)$	$g_x(x_0, y_0)$	$g_y(x_0, y_0)$	$g_{xx}(x_0, y_0)$	$g_{yy}(x_0, y_0)$	$g_{xy}(x_0, y_0)$
(4, 5)	1	-4	0	5	8	-3
(5, -10)	-10	0	0	5	-10	6
(10, 10)	0	0	0	-4	-6	-4
(7, 9)	4	0	0	5	7	4
(4, 8)	2	0	0	2	2	2

(4,5) is _____

(5,-10) is _____

(10,10) is _____

(7,9) is _____

(4,8) is _____