Name _____   Student Number _____

Show all work. Label your answers clearly.

1. (3 points) Let $f(x) = 2x^2 - 5x$. Find and simplify $\frac{f(x+h)-f(x)}{h}$.

2. DeAndrea and Kayla are trying to roll marbles into a circular target drawn on the sidewalk which has radius 5 inches. DeAndrea starts with her marble positioned 3 feet south and 1 inch east of the center of the target. Her marble rolls in a straight line to a point which is 5 inches east and 8 inches north of the center of the target.

a. (1 point) Draw a picture of the situation and impose a coordinate system, labeling significant points.

b. (2 points) What is the equation of the line that DeAndrea's marble follows?

c. (2 points) What is the equation of the circulary boundary of the target?

d. (2 points) What are the coordinates of the point where DeAndrea's marble enters the target?