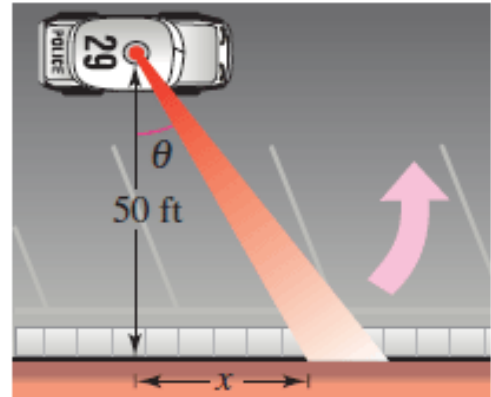# TMATH 124 Quiz 4

Show *all* your work (numerically, algebraically, or geometrically) for each and simplify. Supporting work is needed to earn credit. There are two sides of this quiz.

1. (WebHW11 #9) A patrol car is parked 50 feet from a building shown to the right. The revolving light on top of the car turns at a rate of 8 revolutions per minute.
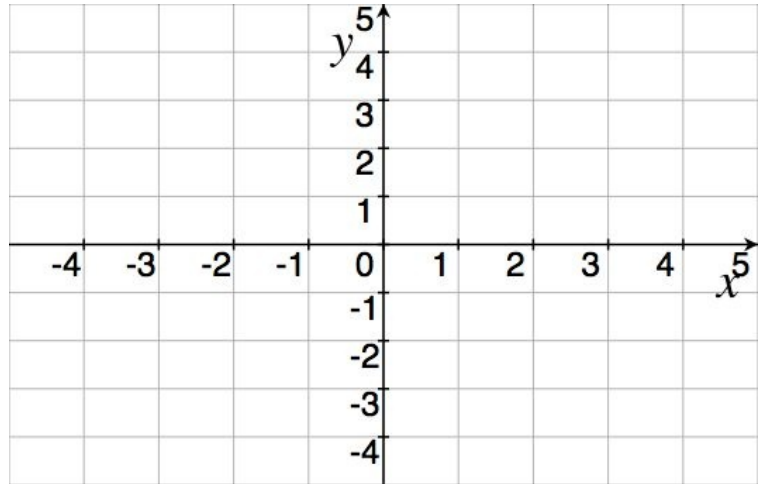
    (a) [1] Find θ as a function of x.

    (b) [3] Find how fast the light beam is moving along the wall when the beam makes and angle of 30° with the building wall.

2. [3] (ExtremeActivity #1) Draw the graph of a function f that satisfies all of the listed criteria:

(a) f is continuous on $(-3, 3)$

(b) the only critical points of f are at $x = -2$ and 3

(c) $f'(-2)$ is not defined

(d) f has a relative minimum at $x = -2$

3. [3] (§4.3 #78) The graph of g is shown to the right. Sketch a graph of the derivative of g on the axes below.