Homework 3/16
Answers to Evens

18. (a) \(-\frac{32}{9\pi} \approx -1.13\) cm/min.
    (b) \(-\frac{80}{3\pi} \approx -8.49\) cm/min.

22. (a) \(-2.5\) ft/s.
    (b) 0.15 rad/s (or s\(^{-1}\)).

24. (a) \(\frac{10}{9\pi} \approx 0.354\) in/min.
    (b) \(-\frac{8}{5\pi} \approx -0.509\) in/min.

28. Assuming that “angle of inclination” means angle measured clockwise from the negative \(x\)-axis up to the line connecting particle and origin, the answer is \(\pm 0.4\) s\(^{-1}\). The plus or minus sign depends on your interpretation of “\(x\)-coordinate decreases”.

If decreasing \(x\)-coordinate means it is getting closer to the origin then the answer is positive.
If, however, decreasing means that a negative \(x\)-coordinate is getting more negative, then \(\theta\) is decreasing.