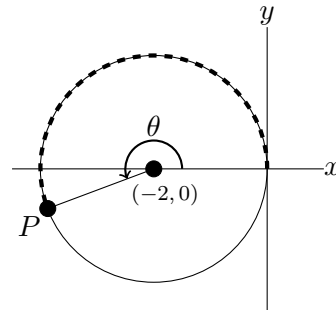**4.** [5 points]

In the diagram at right, a circle of radius 2 is centered at the point $(-2,0)$. The **bold**, dashed arc going from the origin to the point P has length 7.

(i) Find the exact value of the measure of the angle θ, in radians.

Answer: $\theta =$ _____

(ii) Find the (x, y)-coordinates of the point P.

Answer: $(x, y) =$ _____

5. [12 points] Billy Corgi (the lead singer of The Squash) left his pool uncovered when he went on tour. Due to the rainy weather while he was on tour, the volume, in m^3, of the water in the pool w weeks after he goes on tour is given by $p(w) = 10e^{0.05w}$.

a. [3 points] Find $p^{-1}(50)$ and interpret your answer in the context of this problem. Show your work. Your answer should be in exact form or correct to two decimal places.

Answer: $p^{-1}(50) =$ _____

Interpretation:

b. [2 points] What kind of function is the composition $h(w) = \log(p(w))$?

     i. $h(w)$ is linear   iii. $h(w)$ is exponential

     ii. $h(w)$ is quadratic   iv. NONE OF THESE