

Math 124 Practice Quiz Winter 2002

Name:

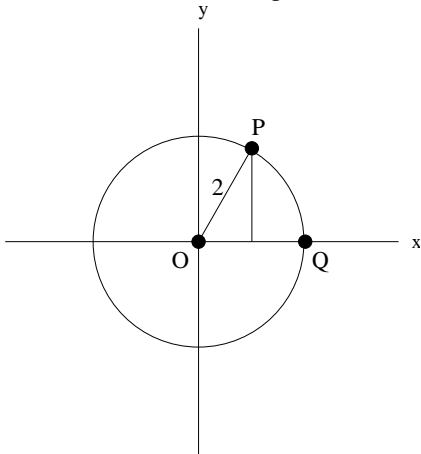
Problem 1. (3 points, no partial credit) Consider the function $h(x) = \frac{1}{\sqrt{x-5}}$.

(a) What is the domain of h ?

(b) Write down an acceptable codomain for h .

Problem 2. (12 points)

Consider the following circle of radius 2, centered at the origin \mathbf{O} . The point \mathbf{P} is on the circle at a distance $\sqrt{3}$ from the x -axis. Let \mathbf{Q} be the intersection of the x -axis with the circle and θ be the angle formed by the segments \mathbf{OP} and \mathbf{OQ} .



(a) Find θ .

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(b) Find the equation of the tangent line to the circle at \mathbf{P} .

(c) Find another angle ψ in $[0, 2\pi]$ such that $\sin \psi = \sin \theta$.

(d) Calculate the x -intercept of the tangent line calculated in part (b).

(e) Find the length of the arc \mathbf{PQ} .