



Bilkent University

Quiz # 02
Math 101-Section 05 Calculus I
5 October 2023 Thursday
Instructor: Ali Sinan Sertöz



Name & Lastname:

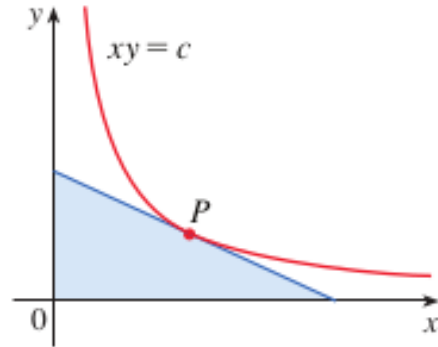
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Student ID:

Q-1)

Exercise 116 on page 147 of your textbook: A tangent line is drawn to the hyperbola $xy = c$, where c is a positive constant, at an arbitrary point P as shown in the figure.

- (a) Show that the midpoint of the line segment cut from this tangent line by the coordinate axes is P .
- (b) Show that the triangle formed by the tangent line and the coordinate axes, the shaded region, always has the same area, no matter where P is located on the hyperbola.



Show your work in detail. Correct answers without detailed explanation do not get any credit.
Grading: 5+5=10 points if satisfactory explanations are provided.

Answers: