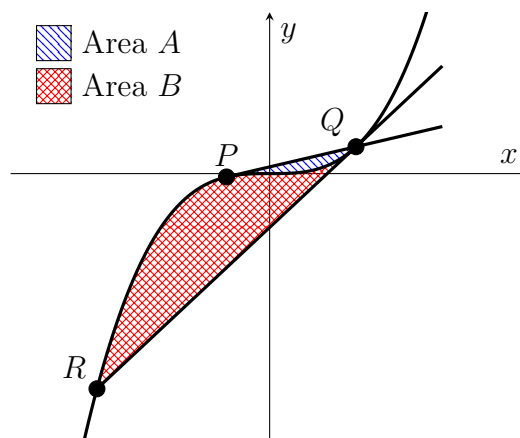


Problem of the Block - Block 7



Sweet Sixteen

On the graph of $y = x^3$, let P be a point such that the tangent line to the function at P intersects the graph a second time at point Q (see the illustration at right). Similarly, the tangent line at Q intersects the graph at point R . Let A equal the area between the tangent line through P and Q and the graph of $y = x^3$. Let B equal the area between the tangent line through Q and R and the graph of $y = x^3$. Show that $B = 16A$.



Turn in solutions to Dr. Bean in Law 206E or by email at sbean@cornellcollege.edu by Wednesday, April 10. You may ask any Mathematics and Statistics faculty member about the questions, but Dr. Bean wrote them (and therefore at one time at least knew the answer to them) so that might be your best bet.

Partial solutions will receive credit (and are encouraged!). Submitting solutions for the Problem of the Block can earn culture points toward the major in mathematics.

For more information about the Problem of the Block, including the current leader board for the yearly competition, and to print off your own copy visit <http://www.cornellcollege.edu/mathematics/problem-of-the-block/index.shtml>.