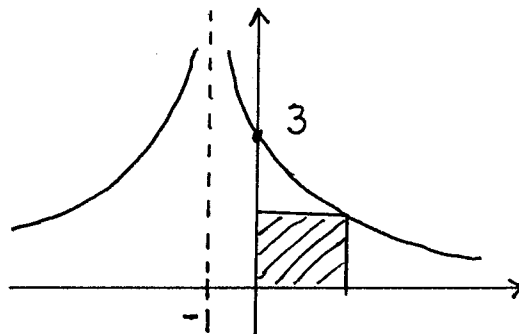
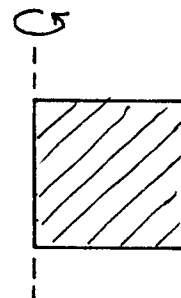


1.) Determine the dimensions and area of the rectangle of largest area which can be inscribed in the first quadrant below the graph of $y = \frac{3}{(x+1)^2}$.

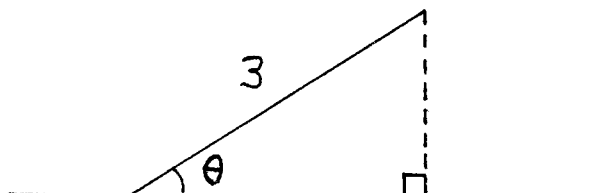


2.) An imaginary cylinder is formed by revolving a rectangle of perimeter 12 inches about one of its edges. What dimensions of the rectangle result in a cylinder of maximum volume?



3.) The 800-room Flea Bag Motel Chain is filled to capacity when the room charge is \$50 per night. For each \$10 increase in room charge, 40 fewer rooms are filled each night. What charge per room will result in the maximum revenue per night?

4.) Consider the given right triangle with hypotenuse 3 ft. and having angle θ . What angle θ results in a triangle of maximum area?



5.) Find the point(s) on the graph of $x^2 - y^2 = 1$ nearest the point $(0, 2)$.

6.) Determine the dimensions of the rectangle of largest area which can be inscribed in a circle of radius 9 cm.

7.) See the map. You can swim at 2 mph and jog at 5 mph. Determine that distance x which results in the least amount of time for you to travel from point A to point B.

