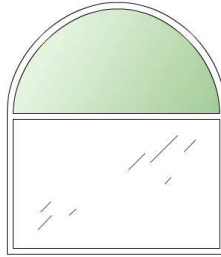


Math 182 Quiz 2 Version A

1. A window is in the form of a rectangle surmounted by a semicircle. The rectangle is of clear glass, whereas the semicircle is of tinted glass that transmits only half as much light per unit area as the clear glass does. The total perimeter is fixed.



Find the proportions of the window that will admit the most light. Neglect the thickness of the frame.

Math 182 Quiz 2 Version A

5. Solve the following indefinite integrals:

(i) $\int \sqrt{\frac{x-1}{x^5}} dx$

(ii) $\int \frac{\ln x^2}{x} dx$

(iii) $\int \sin^3 x dx$

(iv) $\int \ln(2x+1) dx$

Math 182 Quiz 2 Version A

6. Find the volume of the solid generated by revolving the region bounded by $y = 2\sqrt{x}$, $y = 2$ and $x = 0$ about the x -axis.

7. Find the volume of the solid generated by revolving the shaded region about the y -axis.

