

MATH 152

Today

1. WeBWorK/Questions
2. 7.5 Surface area

Goals:

1. 7.5 Surface area (Understand how to find the area of a surface of revolution)

Where is today's material used?

1. Many natural surfaces have circular symmetry and can be thought of as surfaces of revolution.

7.5 Surface Area

1. **Theorem:** Let f be a function with a continuous derivative on $[a, b]$, and let S be the surface generated by revolving the graph of f about the x -axis. Then the surface area of S is given by

$$2\pi \int_a^b f(x) \sqrt{1 + (f'(x))^2} dx.$$

If instead S is obtained by revolving the graph of f about the y -axis, then the surface area of S is given by

$$2\pi \int_a^b x \sqrt{1 + (f'(x))^2} dx.$$

2. Examples: 7.5, p. 397: 5-12, 13-16.

Next Time

1. Final exam!