# 7.2a Disc Method Practice Problems Worksheet

| Disc Method: (Top – Bottom) | Disc Method: (Right – Left ) |
|---|---|
| $$V = \pi \int_{x_1}^{x_2} [R(x)]^2 \, dx$$ | $$V = \pi \int_{y_1}^{y_2} [R(y)]^2 \, dy$$ |
| (expression(s) used above has form: " y = ___ " ) | (expression(s) used above has form: " x = ___ " ) |

1. Let the region R be the area enclosed the function $f(x) = 2x^3$ the horizontal line y=8, and the y-axis. Find the volume of the solid generated when the shaded region is:

a) rotated about the line y = 8
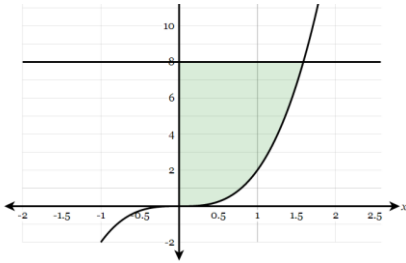
b) rotated about the y-axis





2) Let the region R be the area enclosed the function $f(x) = e^x + 2$, the horizontal line y=7, and the y-axis. Find the volume of the solid generated when the shaded region is:

a) rotated about the line y = 7

b) rotated about the y-axis

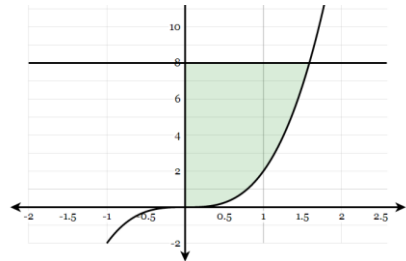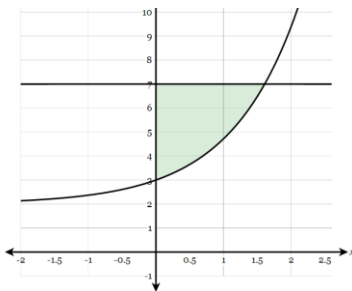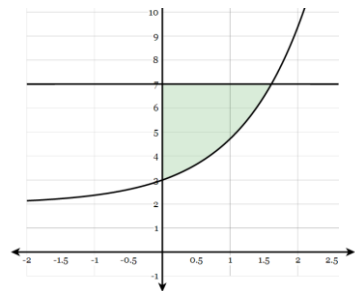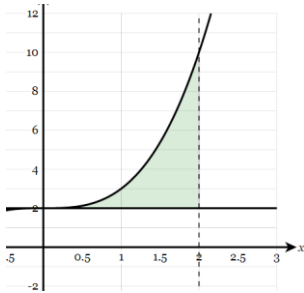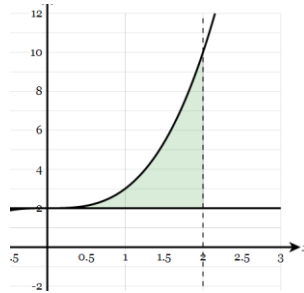| Disc Method: (Top – Bottom) | Disc Method: (Right – Left ) |
|---|---|
| $$V = \pi \int_{x_1}^{x_2} [R(x)]^2 \, dx$$ (expression(s) used above has form: " y = ___" ) | $$V = \pi \int_{y_1}^{y_2} [R(y)]^2 \, dy$$ (expression(s) used above has form: " x = ___" ) |

3) Let the region R be the area enclosed by the function $f(x) = x^3 + 2$, the horizontal line y=2, and the vertical lines x=0 and x=2. Find the volume of the solid generated when shaded region is:

a) rotated about the line y = 2
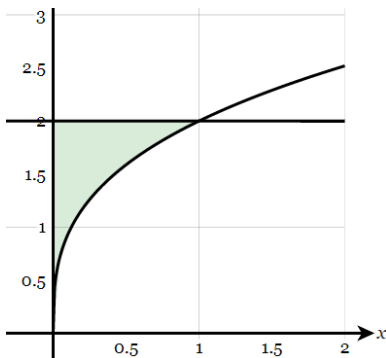
b) rotated about x = 2

4. Let the region R be the area enclosed the function $f(x) = 2x^{\frac{1}{3}}$, the horizontal line y=2, and the y-axis. Find the volume of the solid generated when shaded region is

a) rotated about the line y = 2

b) rotated about y-axis