§6.1 (AREA BETWEEN CURVES) NAME: _____
2 July 2018

(1) Sketch the region enclosed by the curves and set up an integral to compute it's area, but do not evaluate.

(a) $y = 4 - x^2$, $y = x^2 - 4$

(b) $y = x^2 - 6, y = 6 - x^3, x = 0$

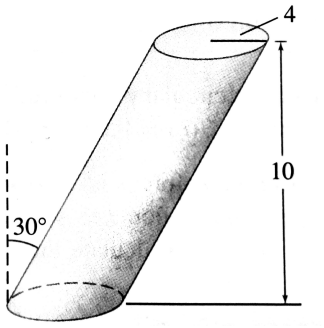
(c) $y = x\sqrt{x-2}$, $y = -x\sqrt{x-2}$, $x = 4$

(d) $x = 2y, x + 1 = (y - 1)^2$

§6.2 (SETTING UP INTEGRALS) NAME:_____

2 July 2018

(1) Calculate the volume of a cylinder inclined at an angle $\theta = \frac{\pi}{6}$ with height 10 and base of radius 4.

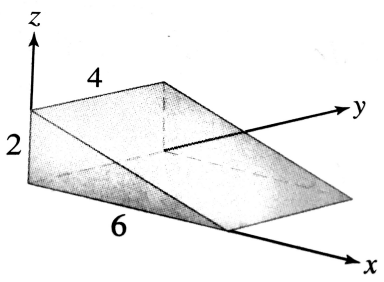


(2) Calculate the volume of the ramp in the figure below in three ways by integrating the area of the cross sections:

(a) perpendicular to the x-axis.

(b) perpendicular to the y-axis.

(c) perpendicular to the z-axis.



(3) Compute the volume of a cone of height 12 whose base is an ellipse with semimajor axis $a = 6$ and semiminor axis $b = 4$.