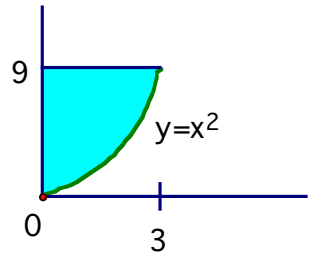
Volumes WS CH.7

Name:_____ Per.____

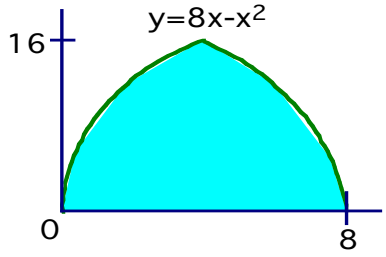
Volumes rotated about other lines



1) **Set up and use your calculator** to solve the following volumes for the shaded region above.

a) *volume about x-axis* *b*) *volume about y-axis* *c*) *vol. about line* $x = 4$

d) *vol. about line* $y = -5$ *e*) *vol. about line* $x = -3$ *f*) *vol. about line* $y = 9$



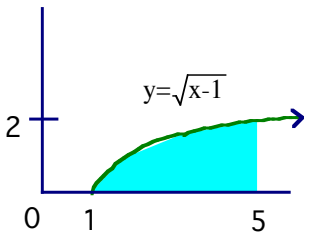
2) **Set up and use your calculator** to solve the following volumes for the shaded region above.

a) *volume about x-axis* *b*) *volume about y-axis* *c*) *vol. about line* $x = 10$

d) *vol. about line* $y = -1$ *e*) *vol. about line* $x = -5$ *f*) *vol. about line* $y = 20$

3) **Set up and use your calculator** to solve the following volumes for the shaded region above.

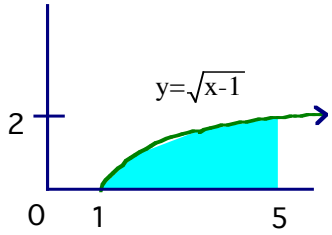
a) *vol. about line* $y = -7$ *b*) *vol. about line* $y = 15$



c) *vol. about line* $x = 9$ *d*) *vol. about line* $x = -8$

Volumes of known cross sections

4) Let R be the region in the first quadrant under the graph of $y = \sqrt{x-1}$ for $1 \le x \le 5$.
Find the volume of the solid whose base is the region R and whose cross sections cut by planes perpendicular to the x-axis (vertical cross sections) are :
(**SET UP AND USE YOUR CALCULATOR**)



a) *squares* *b*) *equilateral triangles* *c*) *semicircles*

d) *rectangle* ($height = 12 - x$) *e*) *regular hexagon*

Find the volume of the solid whose base is the region R and whose cross sections cut by planes perpendicular to the y-axis (horizontal cross sections) are :

f) *squares* *g*) *equilateral triangles* *h*) *semicircles*

5) $f(x) = 9 - x^2$ $g(x) = 3 - x$ (**SET UP AND USE YOUR CALCULATOR**)
Find the volume of the solid whose base is the region between $f(x)$ and $g(x)$ and whose cross sections cut by planes perpendicular to the x-axis are:

a) *squares* *b*) *equilateral triangles*

c) *semicircles* *d*) *rectangle* ($height = 10 \cdot base$)