Bsc 1 Game/Web Dev
Maths 1
Integral Calculus Tutorial III

Area between two curves

Find the bounded area by the functions below (on the relevant interval where applicable):

1. $f(x)=3x+6$ and $g(x)=x^2-1$ $\forall x \in [1,4]$

2. $f(x)=x^2-x+4$ and $g(x)=x^3-2x^2+1$ $\forall x \in [1,4]$

3. $f(x)=x^2$ and $g(x)=x^4$

4. $f(x)=x$ and $g(x)=x^3$

5. $f(x)=a \in \mathbb{R}$ and $g(x)=x^3$ $\forall x \in \mathbb{R}^+$

Volumes of Rotation

Evaluate each of the following volumnes of rotation using, if possible,

(a) Disk like slices

(b) Cylindrical shells

1. Area bounded by $y=x^3$, $x=0$, $y=1$ rotated about the y-axis.

2. Area bounded by $y=x^3$, $x=0$, $y=1$ rotated about the x-axis.

3. Area bounded by $y=x^2$, $x=0$, $y=4$ rotated about the y-axis.

4. Area bounded by $y=x^3$ and $y=x^2$ rotated about the y-axis.

5. Area bounded by $y=x^3$ and $y=x^2$ rotated about the x-axis.