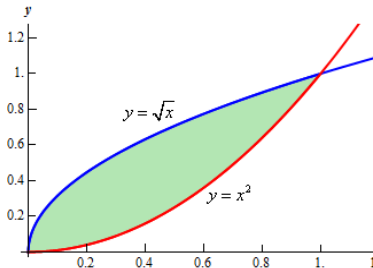


Goals

By the end of this brief, you should be able to:

- Understand and use definite integrals to find the further areas between curves and the x axis and the y axis
- Understand and use definite integrals to find the area between two curves
- Understand and use integrals to find the volumes of the solids of revolution

Begin Assignment.



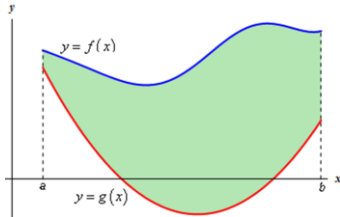
Theoretical Components

JacPlus eBook *Year 12 Maths Quest Methods*
Chapter 9

View the following video

Areas about the x axis:

<http://www.youtube.com/watch?v=DRFyNHdVgUA>



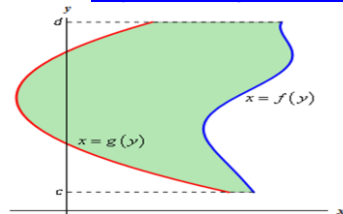
Read worked examples 32 to 34

View the following video

Areas about the y axis:

Part 1: <http://www.youtube.com/watch?v=70NQ3ISYihw>

Part 2: <https://www.youtube.com/watch?v=Xne6Hv9useE>



More useful videos:

<https://www.youtube.com/watch?v=pQJQon7q8gl>

<https://www.youtube.com/watch?v=iAvF1Rn7How>

Practical Components

JacPlus eBook *Year 12 Maths Quest Methods*
Exercises 9F, 9G, 9H and 9J

(Do every 2nd or 3rd question i.e. 1a, c, e; 2a, c, f; 3 etc)

JacPlus eBook *Year 12 Maths Quest Specialist Mathematics*

Exercises 6F Do every 2nd question.

Do all questions (there are solutions provided) on this website:

<http://tutorial.math.lamar.edu/Problems/Calcl/AreaBetweenCurves.aspx>

Investigation

See next page

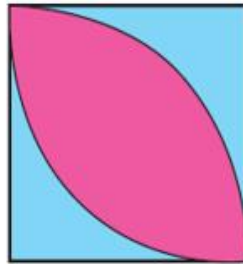
Quiz this week on mathspace.



Week 14 Investigation

The squares below both have an area of 1 square unit.

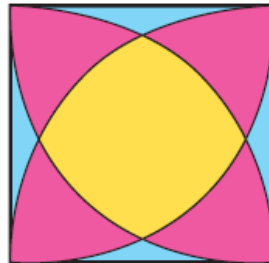
- a Determine the area of the dark pink shape in the square; assuming that the curves are arcs of circles where centres are at the opposite corners of the square.



Answer: 0.571 unit^2

Hint: The centre-radius form of the circle equation is in the format $(x - h)^2 + (y - k)^2 = r^2$, with the centre being at the point (h, k) and the radius being "r".

- b Determine the area of the yellow shape in the square.



Answer: 0.315 unit^2