

Four Maths Questions at Different Levels – Question Set 6

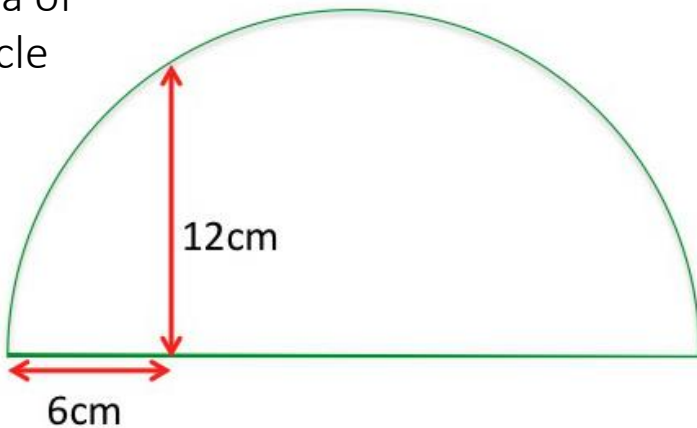
Easy higher tier GCSE

There are 16 hockey teams in a league.
Each team played against each of the other teams.
Work out the total number of matches played.

Edexcel GCSE, June 2018, Paper 3

Something interesting

Find the area of
the semi circle



(@mathsjem, @edsouthall)

Harder higher tier GCSE

y is inversely proportional to d^2
When $d = 10$, $y = 4$

d is directly proportional to x^2
When $x = 2$, $d = 24$

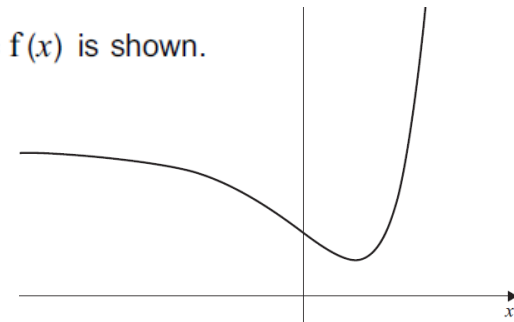
Find a formula for y in terms of x .
Give your answer in its simplest form.

Edexcel GCSE, June 2018, Paper 1

A Level

A function f has domain \mathbb{R} and range $\{y \in \mathbb{R} : y \geq e\}$

The graph of $y = f(x)$ is shown.



The gradient of the curve at the point (x, y) is given by $\frac{dy}{dx} = (x - 1)e^x$
Find an expression for $f(x)$.

AQA, Paper 2, June 2018

Four Maths Questions at Different Levels – Answers Set 6

Easy higher tier GCSE

There are 16 hockey teams in a league.
Each team played against each of the other teams.

Work out the total number of matches played.

120 matches

(note that each match involves two teams)

Edexcel GCSE, June 2018, Paper 3

Harder higher tier GCSE

y is inversely proportional to d^2

When $d = 10$, $y = 4$

d is directly proportional to x^2

When $x = 2$, $d = 24$

$$y = \frac{100}{9x^4}$$

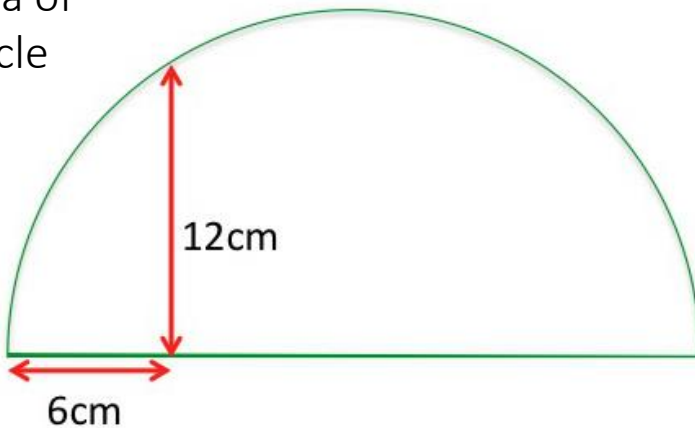
Find a formula for y in terms of x .

Give your answer in its simplest form.

Edexcel GCSE, June 2018, Paper 1

Something interesting

Find the area of
the semi circle



$$\frac{225}{2}\pi \approx 353$$

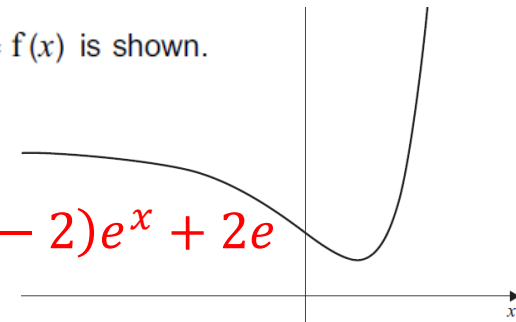
(@mathsjem, @edsouthall)

A Level

A function f has domain \mathbb{R} and range $\{y \in \mathbb{R} : y \geq e\}$

The graph of $y = f(x)$ is shown.

$$f(x) = (x - 2)e^x + 2e$$



The gradient of the curve at the point (x, y) is given by $\frac{dy}{dx} = (x - 1)e^x$

Find an expression for $f(x)$.

AQA, Paper 2, June 2018