5th January **Higher Plus 5-a-day**

Corbettmaths

Express $(8+\sqrt{5})^2$ in the form

$a+b\sqrt{5}$

$(8+\sqrt{5})(8+\sqrt{5})$

$64+8\sqrt{5}+8\sqrt{5}+5$

$69+16\sqrt{5}$

Find the minimum value of $x^2+6x+20$ and the value of x for which it occurs.

$(x+3)^2-9+20$

$(x+3)^2+11$

minimum value of $(x+3)^2$ is 0.

$(x+3)^2+11$ has a minimum of 11.

It occurs when $x=-3$.

Write the equation of the circle C, with centre O and radius 4.

$x^2+y^2=4^2$

$x^2+y^2=16$

Write $2.1\dot{6}\dot{5}$ as a mixed number.
Give your answer in its simplest form.
Use an algebraic approach.

$x=2.165656565\ldots$

$10x=21.6565\ldots$

$1000x=2165.6565\ldots$

$990x=2144$

$x=\frac{2144}{990}=\frac{1072}{495}$

$=2\frac{82}{495}$

Find the nth term of

1, 3, 7, 13, 21, ..., ...

2 4 6 8

2 2 2

$a=1$

$3a+b=2$

$3+b=2$

$b=-1$

$c=1$

n^2-n+1