26th July	Higher Plus 5-a-day

Corbettmaths

Make x the subject of $y = \sqrt[3]{x^5}$

$y^3 = x^5$

$x = \sqrt[5]{y^3}$

Simplify

$\sqrt{48} + \sqrt{300}$

$4\sqrt{3} + 10\sqrt{3} = 14\sqrt{3}$

The curve $y = x^2 - 3x - 4$ is reflected in the x-axis.

Find the equation of the new curve.

$y = -x^2 + 3x + 4$

Solve the simultaneous equations

$2x = 6 - y$ $\quad y = 6 - 2x$

$x^2 + y^2 = 8$ $\quad x^2 + (6-2x)^2 = 8$

$x^2 + 36 - 24x + 4x^2 = 8$

$5x^2 - 24x + 28 = 0$

$(5x - 14)(x - 2) = 0$

$x = \frac{14}{5}$ $\quad x = 2$

$y = \frac{2}{5}$ $\quad y = 2$

The nth term of a sequence is $n^2 - 4n + 5$

By using completing the square, show that every term is positive.

$(n-2)^2 - 4 + 5$

$(n-2)^2 + 1$

$(n-2)^2 \geq 0$

$\therefore (n-2)^2 + 1 > 0$