Name: _____ 5-a-day Further Maths

24th April

Corbettmaths

Solve

$4^{5-6x} = \frac{1}{32^{x-3}}$

$(2^2)^{5-6x} = (2^5)^{-x+3}$

$2^{10-12x} = 2^{-5x+15}$

$10-12x = -5x+15$

$-5 = 7x$

$x = -\frac{5}{7}$

Solve the simultaneous equations

$y = x^2 - 9x - 3$

$y = x$

$x^2 - 9x - 3 = x$

$x^2 - 10x - 3 = 0$

$(x-5)^2 - 25 - 3 = 0$

$(x-5)^2 - 28 = 0$

$(x-5)^2 = 28$

$x - 5 = \pm 2\sqrt{7}$

$x = 5 \pm 2\sqrt{7}$

$x = 5 + 2\sqrt{7}$, $y = 5 + 2\sqrt{7}$

$x = 5 - 2\sqrt{7}$, $y = 5 - 2\sqrt{7}$

Use Pascal's triangle to expand $(5x+9)^3$

1
1 1
1 2 1
1 3 3 1

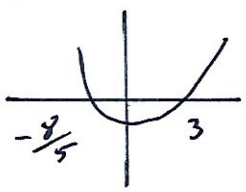
$(5x)^3 + 3(5x)^2(9) + 3(5x)(9)^2 + 9^3$

$125x^3 + 675x^2 + 1215x + 729$

Solve

$5x^2 - 7x - 24 \geq 0$

$(5x+8)(x-3)$



$x \leq -\frac{8}{5}$ or $x \geq 3$

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