Name: _____ 5-a-day Further Maths

12th May

Corbettmaths

Solve $4x^2 + 12x - 7 = 0$

$(2x + 7)(2x - 1) = 0$

$x = -\frac{7}{2}$ or $x = \frac{1}{2}$

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Use Pascal's triangle to expand $(2x + 1)^4$

1
1 1
1 2 1
1 3 3 1
1 4 6 4 1

$(2x)^4 + 4(2x)^3 + 6(2x)^2 + 4(2x) + 1$

$16x^4 + 32x^3 + 24x^2 + 8x + 1$

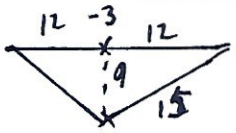
The distance between the points (–3, –4) and (q, 5) is 15.

$q^2 + 12^2 = 15^2$

Find the possible values of q.

y: $5 - (-4)$ 9

or: $q - (-3)$ 12



$-3 - 12 = -15$

$-3 + 12 = 9$

9 or –15

Solve the simultaneous equations

$10x + 20y + 30z = 17$ —(1)

$15x + 15y + 10z = 12$ —(2)

$25x - 10y - 20z = 2$ —(3)

$20x + 40y + 60z = 34$ —(4)

$90x + 90y + 60z = 72$ —(5)

$75x - 30y - 60z = 6$ —(6)

(4) + (6) $95x + 10y = 40$ —(7)

(5) + (6) $165x + 60y = 78$ —(8)

6 × (7) $570x + 60y = 240$ —(9)

(9) – (8) $405x = 162$

$x = 0.4$

Sub $x = 0.4$ into (9)

$228 + 60y = 240$

$60y = 12$ $y = 0.2$

$4 + 4 + 30z = 17$

$30z = 9$ $z = 0.3$

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