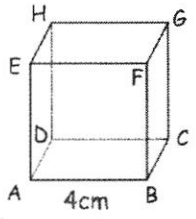
Name: _____ 5-a-day Further Maths

13th June

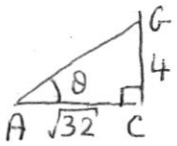
Corbettmaths

Here is a cube with side length 4cm



Calculate the size of angle CAG

$AC = \sqrt{32}$



$\tan\theta = \frac{4}{\sqrt{32}}$

$\theta = 35.3^\circ$

Solve the simultaneous equations

$x + 2y - 3z = -16$ (1)

$2x - 3y + 4z = 46$ (2)

$4x + 3y + 3z = 31$ (3)

(1)+(3): $5x + 5y = 15$

$\Rightarrow x + y = 3$

(1)×4+(2)×3: $10x - y = 74$

$11x = 77$

$\Rightarrow x = 7$

$y = -4$

$7 - 8 - 3z = -16$

$3z = 15$

$\Rightarrow z = 5$

Circle 1 has an equation of
$(x-6)^2 + (y-2)^2 = 25$

Circle 2 has an equation of
$(x+7)^2 + (y-8)^2 = 100$

Calculate the distance between the centres of Circle 1 and Circle 2

$(6, 2) \leftrightarrow (-7, 8)$

$\sqrt{13^2 + 6^2} = \sqrt{205}$

(14.32)