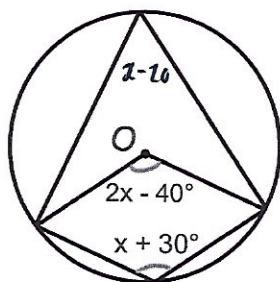


11th February



Corbettmaths



Work out the size of x

$$x - 10 + x + 30 = 180$$

$$2x + 10 = 180$$

$$x = 85^\circ$$

Solve the simultaneous equations

$$x + 2y - 4z = -13 \quad \text{--- (1)}$$

$$7x + 4y + 6z = 14 \quad \text{--- (2)}$$

$$3x - y + 2z = 10 \quad \text{--- (3)}$$

$$2 \times (3) \quad 6x - 2y + 4z = 20 \quad \text{--- (4)}$$

$$(1) + (4)$$

$$7x = 7$$

$$\boxed{x = 1}$$

$$(3) \times 3 \quad 9x - 3y + 6z = 30$$

$$(2) - (3) \times 3$$

$$-2x + 7y = -16 \quad \text{--- (5)}$$

sub $x=1$ into (5)

$$-2 + 7y = -16$$

$$7y = -14$$

$$\boxed{y = -2}$$

sub $x=1$ & $y=-2$ into (1)

$$1 - 4 - 4z = -13$$

$$-4z = -10 \quad \boxed{z = 2.5}$$

The curve C has equation

$$y = -x^3 + 12x^2 - 36x$$

Work out the coordinates of any stationary point on this curve and determine their nature $\frac{dy}{dx} = 0$

$$\frac{dy}{dx} = -3x^2 + 24x - 36$$

$$-3x^2 + 24x - 36 = 0$$

$$-x^2 + 8x - 12 = 0$$

$$x^2 - 8x + 12 = 0$$

$$(x - 2)(x - 6) = 0$$

$$x = 2$$

$$x = 6$$

$$y = -32$$

$$y = 0$$

$$(2, -32)$$

$$(6, 0)$$



$(2, -32)$ minimum

$(6, 0)$ maximum