Presentation Template

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1. Problem

2. Solution
   - Given values
   - Section formula
   - Verified values

Problem Statement

The position vector of the point which divides the join of points $2a - 3b$ and $a + b$ in the ratio $3 : 1$ is:

Given values

Vector	Coordinates
A	$2a - 3b$
B	$a + b$
C	$\frac{5}{4}\ a$

Table: Given Values

Section formula

Solution: Using Section Formula ($k = 3$):

$$C = \frac{kB + A}{k + 1} \tag{3.1}$$

$$C = \frac{1}{3 + 1}(3B + A) \tag{3.2}$$

$$\implies C = \frac{1}{4}((3a + 3b) + (2a - 3b)) \tag{3.3}$$

$$C = \frac{5}{4}a \tag{3.4}$$

The code in

`https://github.com/SaiAkhila326/Mt/blob/master/mt/q1m/codes/verify.py`

verifies the equation.

Verified values

Row	a	b	A = 2a - 3b	B = a + b	Resultant Vector
Row 1	1.00	3.00	-7.00	4.00	1.25
Row 2	2.00	4.00	-8.00	6.00	2.50

Table: Verified values