
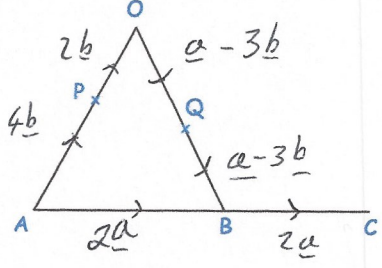


<p><b>28th October</b></p>	 Corbettmaths
<p>A sequence is defined by the term-to-term rule</p> $u_{n+1} = 5u_n + 2$ $u_2 = 22$	<p>Find <math>u_1</math></p> $u_2 = 5u_1 + 2$ $22 = 5u_1 + 2$ $20 = 5u_1 \quad u_1 = 4$
<p>Make x the subject of</p> $y = \frac{c}{(x+b)^3}$ $y(x+b)^3 = c$ $(x+b)^3 = \frac{c}{y}$	$x+b = \sqrt[3]{\frac{c}{y}}$ $x = -b + \sqrt[3]{\frac{c}{y}}$
<p>The numbers a, b and c are irrational numbers and not equal.</p> <p>abc is rational.</p> <p>Write down possible values of a, b and c</p>	$a = \sqrt{2} \quad b = \sqrt{3}$ $c = \sqrt{6}$ $\sqrt{2 \times 3 \times 6} = \sqrt{36} = 6$
<p>Find the vector <math>\overrightarrow{OB}</math> in terms of a and b</p> $-6\underline{b} + 2\underline{a}$ $2\underline{a} - 6\underline{b}$	 <p>AOB is a triangle. P is a point on AO.</p> $\overrightarrow{AB} = 2a \quad \overrightarrow{AO} = 6b \quad AP:PO = 2:1$
<p>Q is the midpoint of OB. B is the midpoint of AC. Show PQC is a straight line.</p> $\overrightarrow{PQ} = \underline{a} - \underline{b}$ $\overrightarrow{QC} = 3\underline{a} - 3\underline{b}$ $\overrightarrow{QC} = 3\overrightarrow{PQ} \quad \therefore \text{parallel}$	<p>since <math>\overrightarrow{PQ}</math> &amp; <math>\overrightarrow{QC}</math> are parallel &amp; pass through a common point (Q),                  PAC is a straight line.</p>