

ANSWER KE	EYS	///. matha 190	///. marina go	///. Imathor go	///. Interference go	///. umatinengo	///. Imathorgo //
(3)	2. (1)	3. (3)	4. (3)	5. (4)	6. (1)	7. (4)	8. (4)
(2) nathong	10. (3)						
(3)			/// mathongo				
		en coordinates of D as	$\operatorname{re}\left(\frac{2-4}{2}, \frac{2-4}{2}\right) = (-$	-1, -1).			
/ mathong	C (5, -8)						
/							
/	ya /// washanga						
	io izza i i danongo						
4(2,2), I)(-1 -1) - R(-4 -4)						
	f median, $CD = \sqrt{(-\frac{1}{9})^2}$						
(1)	mathongo						
Let the requ	uired points be P & Q						
AP : PD =	= 1 : 2 and AQ : QB						
mathong	Qmathongo						
A (0, 0)	P						
	g P by using section fo	ormula (internal divis	ion) mathongo				
$\Rightarrow P \equiv ($	$\frac{1\times9+2\times0}{1+2}$, $\frac{1\times12+2\times0}{1+2}$)						
\Rightarrow P \equiv (3	mathongo						
Now findin AQ : QB :	5 4						
$\equiv (6, 8)$	211)						
(3) Midpoin	nt of PR is at $\left(3,rac{9}{2} ight)$ a	and midpoint of QS is	$a\left(\frac{a+4}{2},\frac{b+6}{2}\right).$				
1	llelogram, diagonals bi						
4	S and $\frac{b+6}{2} = \frac{9}{2} \Rightarrow a = 2$						
`							
Area of ΔA $\Rightarrow \frac{1}{3} \left[\frac{3k-5}{k-3} \right]$	$ABC=2 ext{ sq.units} \ (5+2)+1\Big(-2-rac{5k+1}{5}\Big)$	$-)+7(\frac{5k+1}{2}-5)=$	± 2				
3 + k+1 $\Rightarrow 14k-6$	$6=\pm 4(k+1)$ $\Rightarrow k=$	7 or $\frac{31}{9}$					
(4) Let the	third vertex be (h, k)						
$\therefore k = h +$ Also area o	£4						
$\therefore rac{1}{2}[2(-2$	(k-1)+3(k-1)+h	$+2)]=\pm 5$					
$\Rightarrow k + 3h$	$-7 = \pm 10 \dots (2)$						
Solving (1) $h = \frac{7}{2} k$	& (2) we get $= \frac{13}{2} \Rightarrow \left(\frac{7}{2}, \frac{13}{2}\right)$						
	$=rac{1}{2}\Rightarrow\left(rac{1}{2},rac{1}{2} ight) \ rac{3}{2},\ k=rac{3}{2}\Rightarrow\left(-rac{3}{2},rac{3}{2} ight)$						
mathong	$, n = {1 \over 2} \rightarrow \left({-1 \over 2}, {1 \over 2} \right)$ mathongo						



Answer Keys and Solutions

6.				
	Let the third vertex be (x, y)			
	then the centroid of the triangle is $G \equiv \left(\frac{x_1 + x_2 + x_3}{3}, \frac{y_1 + y_2 + y_3}{3}\right)$ mathongo /// mathongo ///			
	$\Rightarrow G \equiv \left(rac{5-2+\mathrm{x}}{3},rac{4+4+\mathrm{y}}{3} ight) = (5,\ 6)$			
	$\Rightarrow \frac{3+x}{3} = 5$ and $\frac{8+y}{3} = 6$ longo /// mathongo /// mathongo ///			
	$\Rightarrow x = 12$ and $y = 10$			
	$\therefore G \equiv (12,\ 10)$			
7.	(4) As two lines are perpendicular, so triangle is right angle Δ where right angle is made at point	of intersection of t	hese two lines.	
	Also in right angle triangle, orthocentre is point of intersection of perpendicular lines.			
	\Rightarrow orthocentre is point of intersection of lines $x-y+1=0$ and $x+y+3=0$ i.e. $(-2,-1)$			
8.	(4)			
	We know that orthocentre of triangle is point of intersection of any two altitudes of triangle.			
	Like in this figure,			
	Slope of BC $\Rightarrow \frac{(y_2-y_1)}{(x_2-x_1)} = \frac{0-4}{4-3} = -4$			
	Slope of BC $\Rightarrow \frac{1}{(x_2-x_1)} = \frac{1}{4-3} = -4$ We know that if two lines are perpendicular then $m_1m_2 = -1$			
	Here BC is perpendicular to AL			
	\Rightarrow Slope of AL is $\frac{1}{4}$ mathongo /// mathongo /// mathongo ///			
	Where AL is the altitude from A to BC,			
	$\Rightarrow (y-y_1) = m(x-x_1)$			
	$\Rightarrow (y-0)=\frac{1}{4}(x-0)$ athongo /// mathongo /// mathongo ///			
	Similarly, altitude of CN is $x = 3$			
	Hence, point of intersection of AL and CN is $(3, 3/4)$			
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	L			
	mathous // mathon /// mathongo /// mathongo // mathongo //			
	A B			
	(0,0) N $(4,0)$			
9.	(2)athongo /// mathongo /// mathongo /// mathongo ///			
	Given $A(0,0)$, $B(0,2)$ $C(2,0)$,			
	\overline{AC} is a horizontal line and \overline{AB} is a vertical line with the same and \overline{AB} is a vertical line \overline{AB} is a vertical line \overline{AB}			
	The first volume.			
	Given, vertices of $\triangle ABC$ are the vertices of right-angled triangle, right-angled at A.			
	In a right-angled triangle, A is orthocentre and mid-point of BC is $D\left(\frac{2+0}{2}, \frac{0+2}{2}\right) = (1, 1)$, which	is the circumcentre	/// mathongo	
	\therefore Required distance $=AD=\sqrt{\left(1-0 ight)^2+\left(1-0 ight)^2}=\sqrt{2}$ units.			
10.	. (3)			
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	(-2,3) $(-2,3)$ $(-2,3)$			
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	(4, -3)			
	Centroid of Δ DEF = Centroid of Δ ABC $C\left(\frac{x_1+x_2+x_3}{y_1+y_2+y_3}\right)$			
	$G\Big(rac{x_1 + x_2 + x_3}{3}, rac{y_1 + y_2 + y_3}{3}\Big)$			
	$\Rightarrow C = \begin{pmatrix} -2+4+4 & 3-3+5 \\ 2 & 5 \end{pmatrix}$			
	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$			