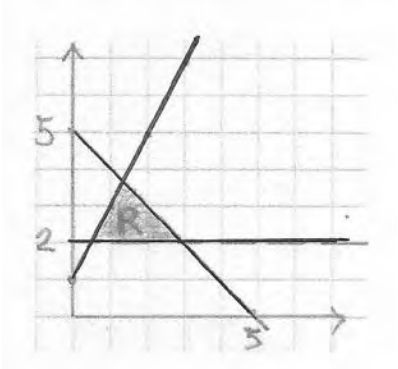
Question	Working	Answer	Mark	Notes	Sub-Total	Total
14 (a)(i)	$y = 2$		B1	correct line	1	
(ii)	$x + y = 5$		B1	correct line (condone incorrect labelling)	1	
(iii)	$y = 2x + 1$		B1	correct line	1	
(b)		**R** correctly placed	B1	Do not award if lines incorrect Ignore labelling of lines	1	4
15	$\frac{1}{5}\times\left(\frac{120}{5}\times 3\right)(=14.4(0))$		M1	or (Barry:) $\frac{3}{5}\times\frac{1}{5}(=\frac{3}{25})$		
	$0.35\times\left(\frac{120}{5}\times 2\right)(=16.8(0))$		M1	or (Carlos:) $\frac{35}{100}\times\frac{2}{5}(=\frac{14}{100}=\frac{7}{50})$		
	$\frac{'14.4'+'16.8'}{120}=\frac{"31.2"}{120}$		M1	Dep on M2 or for $'\frac{3}{25}'+'\frac{7}{50}'$		
		$\frac{13}{50}$ or 0.26	A1			4

Question	Working	Answer	Mark	Notes	Sub-Total	Total
16 (a)		$6w^5y^8$	B2	B1 for 2 terms correct as part of a product. Do not ISW	2	
(b)		$3a^2c$	B2	B1 for 2 terms correct as part of a product, allow $3a^2c^1$. Do not ISW	2	4
17	$OBA = 52°$		M1	may be marked on diagram		
	$AOB = 76°$ or $BAC = 128°$		M1	may be marked on diagram must be identified as correct angles		
		14	A1			
	e.g. angle between **tangent** and **radius** = **90°** base angles/radii equal / isosceles triangle **Angle sum** of **triangle** Angle sum of **triangle** =**180** **Angle sum** of **straight line** Angle sum of **straight line** = **180**		B1	for 2 correct reasons for method used		4
18 (a)	$\begin{pmatrix}-4\\2\end{pmatrix}+\begin{pmatrix}-2\\6\end{pmatrix}$ or $\begin{pmatrix}-2\\6\end{pmatrix}-\begin{pmatrix}4\\-2\end{pmatrix}$	$\begin{pmatrix}-6\\8\end{pmatrix}$	M1 A1	oe	2	
(b)	$\sqrt{"(-6)"^2+"8"^2}$		M1ft	ft part(a). Condone missing minus.		
		10	A1ft	ft part (a)	2	4

Question	Working	Answer	Mark	Notes	Sub-Total	Total
19	$(3x+2)\times\frac{5}{3x^2-7x-6}\left[-\frac{5}{x+3}\right]$		M1	For × by reciprocal condone missing bracket round $3x + 2$		
	$(3x+2)\times\frac{5}{(3x+2)(x-3)}\left[-\frac{5}{x+3}\right]$		M1	Factorising correctly		
	$\frac{5(x+3)-5(x-3)}{(x-3)(x+3)}$		M1	Correct method for combining into a single fraction		
	$\frac{5x+15-5x+15}{(x+3)(x-3)}$					
		$\frac{30}{x^2-9}$	A1	or $\frac{30}{(x+3)(x-3)}$		4
20	$\overrightarrow{AP} = -\mathbf{a} + \frac{5}{6}(\mathbf{a} + 3\mathbf{b})$ **[=** $-\frac{1}{6}\mathbf{a} + \frac{5}{2}\mathbf{b}$**]**		M1	For correct vector for $\overrightarrow{AP}$		
	$\overrightarrow{AD} = -\mathbf{a} + n\mathbf{b}$ **or** $-\mathbf{a} + (5+n)\mathbf{b}$		M1	indep allow $\overrightarrow{OD} = \mathbf{a} + n\overrightarrow{AP}$		
	$\overrightarrow{AD} = 6(-\frac{1}{6}\mathbf{a} + \frac{5}{2}\mathbf{b})$ [=$-\mathbf{a} + 15\mathbf{b}$]		M1	or $AD = 6AP$ or $1-\frac{1}{6}n = 0$ and $\overrightarrow{OD} = 15\mathbf{b}$		
	$OB : OD = 5 : 15$	1 : 3	A1	Seeing 5 : 15 or $5\mathbf{b} : 15\mathbf{b}$ equals 1 : 3 from correct working		4

Question	Working	Answer	Mark	Notes	Sub-Total	Total
21	$\sqrt{8^2+15^2}$ (=17)		M1	Using Pythagoras correctly		
	10×9+18×9+15×9		M1	correct areas of the 3 rectangles		
	$\frac{18+10}{2}\times 15$ *or* $10\times 15+\frac{8\times 15}{2}$ [=210]		M1	Attempt at area of trapezium		
	2×"210"+10×9+18×9+15×9+"17"×9		M1	dep on previous method marks – for adding the six areas together		
		960	A1			5
22 (a)	$[T=]\frac{k}{y^2}$		M1	For $\frac{k}{y^2}$		
	$0.32=\frac{k}{5^2}$		M1	Subst 0.32 for *T* and 5 for *y*		
		$T=\frac{8}{y^2}$	A1	**NB** SCB1 for $0.32=\frac{k}{\sqrt{5}}$	3	
(b)	$200=\frac{"8"}{y^2}$		M1			
		0.2	A1	oe	2	5