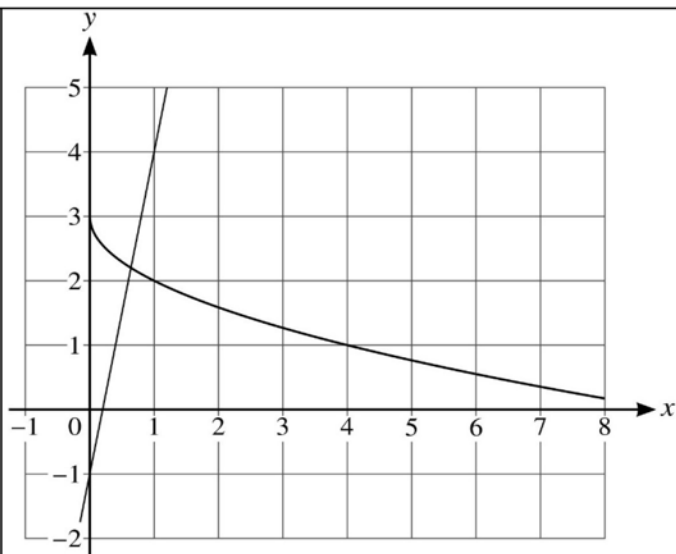


9

(a)

**B1****1.1**

Correct line through ((0, -1) and (1, 4)

If x-intercept marked
and (1, 4) slightly out
may award **B1 BOD****[1]**

9	(b)	DR $3 - \sqrt{x} = 5x - 1$ or $y = 5(3 - y)^2 - 1$ $4 - 5x = \sqrt{x} \Rightarrow (4 - 5x)^2 = x$	M1	3.1a		
		$25x^2 - 41x + 16 = 0$ or $5y^2 - 31y + 44 = 0$	M1	1.1	Getting into suitable form for solution ie =0	Or as a quadratic in \sqrt{x} $5x + \sqrt{x} - 4 = 0$
		$(x - 1)(25x - 16) = 0$ or $(5y - 11)(y - 4) = 0$	M1	1.1	Attempt to solve quadratic by formula or factorising (oe, via \sqrt{x} quadratic)	$(5\sqrt{x} - 4)(\sqrt{x} + 1) = 0$
		$x = \frac{16}{25} = 0.64$ or $y = 2.2$	A1	2.2a	Correct root chosen Or replace M1A1 with SC1 if $x = 0.64$ or $y = 2.2$ seen with no method for solving	$\sqrt{x} = \frac{4}{5}$ so $x = 0.64$
		$y = 5 \times 0.64 - 1 = 2.2$ or $x = (3 - 2.2)^2 = 0.64$	M1	1.1	FT <i>their</i> positive root	
		$\frac{1}{2}(0.64 - 0.2)(2.2)$ [= 0.484 = $\frac{121}{250}$]	M1	3.1a	Attempt to find area of triangle	$\frac{1}{2} \times 0.64 \times 2.2$ is M0
		Alternative method for area of triangle $\int_{0.2}^{0.64} (5x - 1) dx$	M1 M1		Correct integral Correct limits (FT <i>their</i> positive root)	
		$\int_{0.64}^4 (3 - \sqrt{x}) dx$	M1*	2.1	Allow any limits $0 \leq x \leq 4$	Allow if clearly embedded eg $\int_{0.64}^4 (5x - 4 + \sqrt{x}) dx$
		$\left[3x - \frac{2}{3}x^{\frac{3}{2}}\right]_{0.64}$	M1**	1.1	Integration of M1* integral \sqrt{x} term correct (ignore limits)	Dep on M1* only
		$\left(12 - \frac{16}{3}\right) - \left(1.92 - \frac{128}{375}\right) = \frac{636}{125} = 5.088$	M1	1.1	Evaluation of M1* integral substitution seen	Dep on M1**
Total area = $0.484 + 5.088 = 5.572 = \frac{1393}{250} = 5 \frac{143}{250}$	A1	1.1	All correct, other partitions possible	Dep on all 9 previous marks		
					[10]	