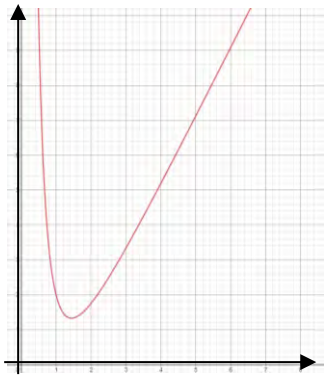
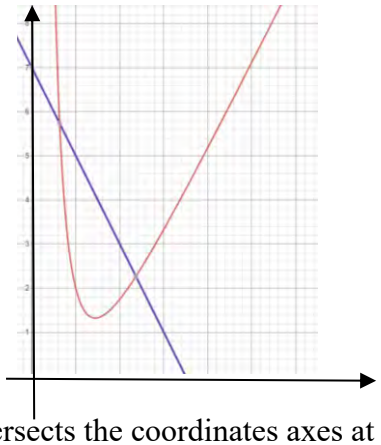
<table>
<tr><th>Question number</th><th>Scheme</th><th>Marks</th></tr>
<tr><td>8 (a)</td><td>
<table>
<tr><td>x</td><td>0.5</td><td>0.75</td><td>1</td><td>1.5</td><td>2</td><td>3</td><td>4</td><td>5</td></tr>
<tr><td>y</td><td>10</td><td>3.83</td><td>2</td><td>1.33</td><td>1.75</td><td>3.33</td><td>5.19</td><td>7.12</td></tr>
</table>
</td><td>B2
[2]</td></tr>
<tr><td>(b)</td><td>Graph drawn: All points to within half of a square
All points joined together in a smooth curve</td><td>B1ft
B1ft
[2]</td></tr>
<tr><td>(c)</td><td>$2x+\frac{3}{x^2}-3=ax+b \Rightarrow 2x^3+3-3x^2=ax^3+bx^2$
$\Rightarrow x^3(2-a)-x^2(3+b)+3\equiv 4x^3-10x^2+3$
$2-a=4 \Rightarrow a=-2$
$3+b=10 \Rightarrow b=7$
So line is $y=7-2x$
$x=0.6,\ 2.4$
[Accept $x=0.7$ and $x=2.3$]
ALT
$\frac{4x^3-10x^2+3}{x^2}=0 \Rightarrow 4x-10+\frac{3}{x^2}=0$
$2x+\frac{3}{x^2}=10-2x \Rightarrow 2x+\frac{3}{x^2}-3=7-2x$ so line is $y=7-2x$
$x=0.6,\ 2.4$
[Accept $x=0.7$ and $x=2.3$]</td><td>M1
M1A1
M1A1
[5]
{M1
M1A1
M1A1
[5]}</td></tr>
<tr><td colspan="3">Total 9 marks</td></tr>
</table>

Part	Mark	Notes
(a)	**B1**	For two out of 4 values rounded correctly. Penalise rounding only once for awrt the required values.
	B1	For all four values correctly rounded
(b)	**B1ft**	For **their** points plotted correctly to within half of a square.
	B1ft	For their points joined up in a smooth curve. 
(c)	**M1**	For setting $2x+\frac{3}{x^2}-3=ax+b$ and attempting to simplify to the form $x^3(2-a)-x^2(3+b)+3$ where the coefficient of each of x^3 and x^2 is in terms of a and/or b
	M1	For equating coefficients and attempting to find the value of a and b
	ALT	
	M1	For dividing through by x^2 to give $4x-10+\frac{3}{x^2}=0$
	M1	For adding 7 and subtracting $2x$ from both sides to give on the LHS $2x+\frac{3}{x^2}-3$
	A1	For the correct straight line $y=7-2x$
	M1	For their line drawn provided it is of the form $y=A-2x$ where $A\neq 0$  The line intersects the coordinates axes at (0, 7) and (3.5, 0)
	A1	For both values of 0.6 and 2.4 Accept 0.7 and 2.3 - without working these roots score no marks. **NB**: Calculator roots are 2.366 and 0.634