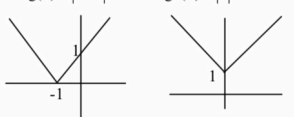


Modulus Function Examples - Mark Schemes Next Page

- 2** Given that $f(x) = |x|$ and $g(x) = x + 1$, sketch the graphs of the composite functions $y = fg(x)$ and $y = gf(x)$, indicating clearly which is which. **[4]**

- 1** Solve the equation $|2x - 1| = |x|$. **[4]**

Mark Schemes

<p>2 $f(x) = x+1$ $g(x) = x +1$</p> 	<p>B1 B1 B1 B1 [4]</p>	<p>soi from correctly-shaped graphs (i.e. without intercepts)</p> <p>graph of $x+1$ only graph of $x +1$</p>	<p>but must indicate which is which bod gf if negative x values are missing</p> <p>'V' shape with $(-1, 0)$ and $(0, 1)$ labelled 'V' shape with $(0, 1)$ labelled $(0, 1)$</p>
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<p>1 $2x-1 = x$ $\Rightarrow 2x-1=x, x=1$ or $-(2x-1)=x, x=1/3$</p>	<p>M1A1 M1A1 [4]</p>	<p>www www, or $2x-1=-x$ must be exact for A1 (e.g. not 0.33, but allow 0.3) condone doing both equalities in one line e.g. $-x=2x-1=x$, etc</p>	<p>allow unsupported answers or from graph or squaring $\Rightarrow 3x^2-4x+1=0$ M1 $\Rightarrow (3x-1)(x-1)=0$ M1 factorising, formula or comp. square $\Rightarrow x=1, 1/3$ A1 A1 allow M1 for sign errors in factorisation -1 if more than two solutions offered, but isw inequalities</p>
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