

Question	Answer	Mark	Mark scheme	Additional guidance
20 (a)	5	M1	for method to find $f^{-1}(x)$ , eg $\frac{x+6}{3}$ oe <b>or</b> for $3x - 6 = 9$ oe <b>or</b> for $f(5) = 3 \times 5 - 6 = 9$	For reference $f(x) = 3x - 6$ and $g(x) = \frac{2x^2}{x^2 + 1}$ Allow $f^{-1}$ and $f$ to be in terms of $y$ ie accept $\frac{y+6}{3}$ and $3y - 6 = 9$
(b)	$\frac{-6}{x^2 + 1}$	M1	for method to find $fg(x)$ , eg $f\left(\frac{2x^2}{x^2 + 1}\right)$ or $3 \times \frac{2x^2}{x^2 + 1} - 6$	Condone sign errors
		M1	for complete method to write a correct expression for $fg(x)$ , as a single fraction or as two fractions with a common denominator eg $3 \times \frac{2x^2}{x^2 + 1} - \frac{6(x^2 + 1)}{x^2 + 1}$	
		A1	for $\frac{-6}{x^2 + 1}$	