Evaluate each integral using *u*-substitution. Clearly indicate your connection between *u* and *x*. Include notation for the differentials *du* and *dx* throughout.

(1) $\int 2x\left(x^2-1\right)^4\,dx$	(2) $\int \sin\left(2x\right)\cos\left(2x\right)dx$
(3) $\int 4x^2\sqrt{x^3+4}\,dx$	(4) $\int xe^{x^2}\,dx$
(5) $\int_1^3 \frac{x+2}{x^2+4x+7}dx$	(6) $\int \frac{x\ln\left(x^2+1\right)}{x^2+1}dx$
(7) $\int_0^2 \frac{5x^2}{e^{x^3}}dx$	(8) $\int_4^5 x\sqrt{x-4}\,dx$