Use substitution to find the following integrals:

1. $\int 2x\sqrt{x^2+3}\,dx$
2. $\int 5\cos(3x)\,dx$
3. $\int 7x^2\sin(4x^3)\,dx$
4. $\int e^{2x+3}\,dx$
5. $\int xe^{-x^2/2}\,dx$
6. $\int \dfrac{x+2}{x^2+4x}\,dx$
7. $\int \dfrac{3}{x+4}\,dx$
8. $\int \dfrac{1}{5-x}\,dx$
9. $\int \sqrt{x+3}\,dx$
10. $\int \sqrt{4-x}\,dx$
11. $\int x\sqrt{x^2-1}\,dx$
12. $\int (x^2-2)\sqrt{x^3-3x^2+3}\,dx$
13. $\int \sin(\dfrac{3\pi}{2}x+\dfrac{\pi}{4})\,dx$
14. $\int \cos(2x-1)\,dx$
15. $\int (4x-3)\sqrt{2x^2-3x+2}\,dx$
16. $\int_0^3 x\sqrt{x^2+1}\,dx$
17. $\int_1^2 x^2\sqrt{x^3+2}\,dx$
18. $\int_2^3 \dfrac{2x+3}{(x^2+3x)^3}\,dx$
19. $\int_0^2 \dfrac{2x}{\sqrt{4x^2+3}}\,dx$
20. $\int_2^5 (x-2)e^{-1/2(x-2)^2}\,dx$
21. $\int_{\ln 4}^{\ln 7} \dfrac{e^x}{(e^x-3)^2}\,dx$
22. $\int_0^{\pi/3} \sin x\cos x\,dx$
23. $\int_{-\pi/6}^{\pi/6} \sin^2 x\cos x\,dx$