Numerical integration problems

1. Mathematical exercises. Compute the integrals using trapezoidal and Simpson rules. Use the specified number of intervals *n, 2n, 5n, 10n, 20n*.

1.	$\int_{-2}^{4}(2x^2-\sqrt{x+2})dx$	$n=6$	2.	$\int_{-3}^{0}(5x^2+x+1)dx$	$n=6$
3.	$\int_{0}^{3}(3x^2-\sqrt{x})dx$	$n=6$	4.	$\int_{1}^{4}(x^3-\sqrt{x})dx$	$n=6$
5.	$\int_{1}^{4}(7+x-2x^2)dx$	$n=6$	6.	$\int_{0}^{3}(7x^2-3\sqrt{x})dx$	$n=6$
7.	$\int_{2}^{5}(2x^2-2-\sqrt{x})dx$	$n=6$	8.	$\int_{0}^{3}(5x^2+\sqrt{x})dx$	$n=6$
9.	$\int_{-2}^{2}(x^3+1)dx$	$n=8$	10.	$\int_{0}^{4}(2x^2+1-\sqrt{x})dx$	$n=8$
11.	$\int_{-2}^{2}(x^2+\sqrt{x+2}-1)dx$	$n=8$	12.	$\int_{0}^{2}(x^2+2+\sqrt{x})dx$	$n=8$
13.	$\int_{1}^{3}(3x^2-x-1)dx$	$n=8$	14.	$\int_{-1}^{3}(x^3+2)dx$	$n=8$
15.	$\int_{-2}^{2}(2x^2+1-\sqrt{x+4})dx$	$n=8$	16.	$\int_{1}^{4}(2x^2-1{,}5\sqrt{x})dx$	$n=6$
17.	$\int_{1}^{4}(7\sqrt{x}+2x^2)dx$	$n=6$	18.	$\int_{0}^{3}(7x^2+3\sqrt{x})dx$	$n=6$
19.	$\int_{2}^{5}(2x^2-2+\sqrt{x})dx$	$n=6$	20.	$\int_{0}^{3}(5x^2-1+\sqrt{x})dx$	$n=6$
21.	$\int_{3}^{6}(x^2+4+\sqrt{x})dx$	$n=6$	22.	$\int_{2}^{6}(x^3+3)dx$	$n=8$
23.	$\int_{0}^{3}(2x^2-1+\sqrt{x})dx$	$n=6$	24.	$\int_{-2}^{2}(3x^2+2\sqrt{x+2})dx$	$n=8$

2. In the file “velocities.txt” (http://www-personal.umich.edu/~mejn/cp/data/velocities.txt), the first column represents time *t* in seconds and the second - the *x*-velocity in meters per second of a particle, measured once every second from time $t = 0$ to $t = 100$. Read in the data and, using numerical integration, calculate the approximate distance traveled by the particle in the *x* direction as a function of time.