

## Knapsack Problem Examples

**Problem 1** Capacity  $W = 30$ .

item #	profit	weight
1	\$50	5 lb
2	\$140	20 lb
3	\$60	10 lb

**Problem 2** Capacity  $W = 11$ .

item #	profit	weight	ratio
1	\$40	2 lb	(\$20/lb)
2	\$30	5 lb	(\$6/lb)
3	\$50	10 lb	(\$5/lb)
4	\$10	5 lb	(\$2/lb)

**Problem 3** Capacity  $W = 11$ .

item #	profit	weight	ratio
1	\$20	2 lb	(\$10/lb)
2	\$30	5 lb	(\$6/lb)
3	\$35	7 lb	(\$5/lb)
4	\$12	3 lb	(\$4/lb)
5	\$3	1 lb	(\$3/lb)

**Problem 4** Same items as the problem above, but use Capacity  $W = 13$  (instead of  $W = 11$ ).

**Problem 5** Capacity  $W = 25$

item #	profit	weight	ratio
1	\$18	3 lb	(\$6/lb)
2	\$30	6 lb	(\$5/lb)
3	\$40	10 lb	(\$4/lb)
4	\$21	7 lb	(\$3/lb)
5	\$24	12 lb	(\$2/lb)