## Chapter 1

1-4: $54.7 \mathrm{~km} / \mathrm{hr}, 15.2 \mathrm{~m} / \mathrm{s}$
1-6: $n=2$
1-18: 54.1 m
1-28: $M=45.6 \mathrm{~cm} . K=39.4 \mathrm{~cm}$
1-38: $F=200 N, \theta=41^{\circ}$
1-54: (a) 5600 m , (b) 6200 m
1-62: $R=13 \mathrm{~m}, \theta$ (relative to -x axis) $=52^{\circ}$
1-64: 370 N, 230 N

