Acceleration set 2 solutions

1. X = xo + vot+ ½ a t2 = ½ (3.5) (7.5)2 = 92.8 m

If it started at 4.0 m/s

X = 0 + (4.0)(7.5s) + ½ 3.3(7.5)2 = 122.8 m

1. Vf = vo + at : 35 m/s = 0 + 4.5 t; t = 7.78 s

How far will it roll? X = ½ at2 = ½ (4.5)(7.78)2 = 60.5 m

To Stop; vf = vo + at; 0 = 35m/s – 6.8 (t) t = 5.14 s

How far to stop; vf2 = vo2 + 2 a x; 0 = 352 – 2 (6.8) (X)

352/(2(6.8) = 90 m

1. Vf2 = vo2 + 2 a x

7.02 / 2 (1.1m/s/s) = x = 22.3 m.

Time to get to 7.0 m/s; vf = vo + at; 7.0/1.1 = 6.36 s

1. Vf2 = vo2 + 2 a x; how fast after 450 m

Vf2 = 2 (6.5)(450); vf = (5850)1/2  = 76.5 m/s

Time

Vf = vo + at; 76.5/ 6.5 m/s/s = 11.8 s