From the Graph: $n_{bins} = 5$

N_1 ($v = 2$ m/s) = 2 $\quad i = 1$

N_2 ($v = 4$ m/s) = 4 $\quad i = 2$

N_3 ($v = 6$ m/s) = 5 $\quad i = 3$

N_4 ($v = 8$ m/s) = 3 $\quad i = 4$

N_5 ($v = 10$ m/s) = 1 $\quad i = 5$

a.) Most Probable Speed, v_{mp}, is the speed where the distribution is maximum:

$$v_{mp} = 6 \text{ m/s}$$

b.) Average Speed:

$$v_{avg} = \frac{1}{N} \sum_{i=1}^{n_{bins}} v_i N_i \qquad N = 2+4+5+3+1 = 15$$

$$= \frac{1}{15}\{(2 \text{ m/s})(2) + (4 \text{ m/s})(4) + (6 \text{ m/s})(5) + (8 \text{ m/s})(3) + (10 \text{ m/s})(1)\}$$

$$v_{avg} = 5.6 \text{ m/s}$$

c.) RMS Speed:

$$v_{rms} = \left[\frac{1}{N} \sum_{i=1}^{n_{bins}} v_i^2 N_i\right]^{1/2}$$

$$= \left[\frac{1}{15}\{(2 \text{ m/s})^2(2) + (4 \text{ m/s})^2(4) + (6 \text{ m/s})^2(5) + (8 \text{ m/s})^2(3) + (10 \text{ m/s})^2(1)\}\right]^{1/2}$$

$$v_{rms} = 6.02 \text{ m/s}$$