Show all work to receive full credit. Supply explanations when necessary.

1. (1 point) Find the missing probability so that the following table describes a probability distribution.

x	1 ·	4	7	8	10
$P(x)$	0.18	0.21	0.40	?	0.07

$$0.18 + 0.21 + 0.40 + 0.07 = 0.86$$

$$? = 1 - 0.86 = \boxed{0.14}$$

2. (2 points) Find the mean of the probability distribution above.

$$\mu = 1(0.18) + 4(0.21) + 7(0.40) + 8(0.14) + 10(0.07)$$

$$= \boxed{5.64}$$

3. (2 points) Find the probability of each path.

$$A \quad --- \quad \frac{3}{35}$$

$$\underset{1/7}{}$$

$$A \quad \underset{4/7}{\quad\quad} \quad B \quad -- \cdot \quad \frac{12}{35}$$

$$\underset{2/7}{}$$

$$\underset{3/5}{}$$

$$C \quad --- \quad \frac{6}{35}$$

$$A \quad --- \quad \frac{10}{55}$$

$$\underset{2/5}{}$$

$$\underset{5/11}{}$$

$$B \quad \underset{3/11}{\quad\quad} \quad B \quad --- \quad \frac{6}{55}$$

$$\underset{3/11}{}$$

$$C \quad -- \quad \frac{6}{55}$$