Quiz # 21   Name: _____ Key _____

You must show your work to get full credit.

A coin is flipped three times and the outcome of each flip is either a head, H, or a tail, T. The sample space, that is the list of all possible outcomes, of this experiment is

$$S = \{HHH, HHT, HTH, HTT, THH, THT, TTH, TTT, \}.$$

Assuming all outcomes are equally likely

1. What is the probability that there is exactly one head?

Probability is $\frac{3}{8}$

Favorable outcomes
$$= \{HTT, THT, TTH\}$$

$$Prob = \frac{\# \text{ of favorable}}{\text{total } \#} = \frac{3}{8}$$

2. What is the probability there are exactly two tails?

Probability is $\frac{3}{8}$

Favorable out comes
$$= \{HTT, THT, TTH\}$$

$$Prob = \frac{3}{8}$$

3. What is the probability there are more heads than tails?

Probability is $\frac{1}{2}$

Favorable outcomes
$$= \{HHH, HHT, HTH, THH\}$$

$$Prob = \frac{\# \text{ favorable}}{\text{total number}} = \frac{4}{8} = \frac{1}{2}$$