

Instructions: You must show all work to receive full credit for the problems below. You may use Excel where appropriate. Any datasets needed will be posted on Canvas with the quiz file, and you should submit such work along with your quiz. Round answers to two decimal places unless other instructions are given in the problem.

1. A 8"x10" sign is to be rescaled so that it covers 810 square feet. How much does each dimension need to be scaled to achieve this?

$$\text{area} = \frac{2}{3} \cdot \frac{5}{6} = \frac{5}{9} \text{ square feet}$$

$$\sqrt{1458} \approx 38.18$$

each dimension scales by a factor of 38.18

$$8'' = \frac{2}{3}'$$

$$10'' = \frac{5}{6}'$$

$$\frac{810}{(5/9)} = 1458$$

how area scales
each dimension is $\sqrt{\quad}$ of this

2. A coin is flipped 10 times. How many different ways are there to get 6 heads?

$$\binom{10}{6} = 10C6 = 210$$

3. The tables below show three possible probability distributions. Determine if any of them satisfy all the rules of probability.

a.

1	2	3	4	5
10%	18%	23%	25%	24%

yes
% add to 100%

b.

0	1	2	4	8	16	32
10%	18%	-8%	7%	17%	7%	49%

no, can't have % be negative

c.

0	10	20	30	40	50	60	70	80
12%	11%	15%	10%	15%	13%	11%	15%	14%

no % add to more than 100

4. If the probability of getting a head on an unfair coin is 78%, what is the probability of getting a tail?

$$1 - .78 = .22 \quad 22\%$$