

Each WA is worth 10 points. Work right on these pages. You can work together or see a tutor, but NEVER copy. This WA is for a grade, so dishonesty or cutting corners may earn a 0 for all involved.

1. [2 pts - 0.5 each] Several Mahoning County 4-H Clubs held a joint Fun Walk to raise money. One hundred twenty walkers - 80 club members and 40 supporters walked laps at the fairgrounds track. Some walkers completed 40 laps, some completed 50, and so on. For each number of laps, the chart below shows how many club members walked that many laps, and also how many supporters walked that many laps:

Number of laps completed	by	Number of club members	and	Number of supporters
40		15		8
50		20		15
60		16		12
80		24		4
100		5		1

- (a) Find the probability (as decimal to the thousandths place) that a walker completed at least 80 laps.
- (b) Find the probability (as decimal to the thousandths place) that walker was a supporter who completed no more than 50 laps.
- (c) Find the probability (as decimal to the thousandths place) that a walker was a club member and they completed 60 laps.
- (d) Find the probability (as decimal to the thousandths place) that a walker was a supporter (any number of laps) or someone who completed fewer than 50 laps.

2. (a) [1.5 pts] Create TWO different uniform sample spaces (using set notation) for the experiment of choosing one coin at random from a bag that contains 1 penny, 1 nickel, 1 dime, and 1 quarter.

(b) [1 pt] Now create one NON-uniform sample space for the experiment immediately above.

3. [2.5 pts - 0.5 each] An experiment has the following uniform sample space:

(red, 3)	(cat, 3)	(dog, 3)	(cow, 3)	(pig, 3)
(black, 5)	(cat, 5)	(horse, 5)	(goat, 5)	(cow, 5)
(yellow, 4)	(pig, 4)	(goat, 4)	(cow, 4)	(iguana, 4)
(green, 1)	(cat, 1)	(dog, 1)	(goat, 1)	(iguana, 1)

- (a) Put a \* above the outcomes that are favorable for this event: the number does not exceed 3.
- (b) Put a  $\Delta$  above the outcomes that are favorable for this event: the length of the word (number of letters in the word) is equal to the number shown.
- (c) Underline the outcomes that are favorable for this event: the length of the word (number of letters in the word) is at least as big as the number shown.
- (d) Put a large dot  $\bullet$  above the outcomes that are favorable for this event: the word is a reptile and the number is a 5.
- (e) Put a + sign above the outcomes that are favorable for this event: the word is not a color or it has 3 letters.

4. [3 pts - 0.5 each] An experiment consists of choosing one number at random from this set:

$$\{13, 14, 15, 16, 17, 18, 19, 20\}$$

Find the theoretical probabilities of the events below, writing each answer as an UNSIMPLIFIED fraction. It may be helpful to list the favorable outcomes first.

(a) Getting a prime number

(b) Getting a number that is at most 15

(c) Getting a number that is even and a multiple of 3

(d) Getting a number that is even or a multiple of 3

(e) Getting a number that has at least 5 different factors

(f) Getting a number that is divisible by 4 or is a factor of 300