

- 1. This problem concerns lists made from the five symbols C, O, U, N, T.
 - (a) How many length-4 lists are there if repetition is allowed?

Answer:
$$5 \cdot 5 \cdot 5 = 625$$

(b) How many length-4 lists are there if repetition is **not** allowed?

$$\begin{array}{c|c} & & \\ \uparrow & \uparrow & \uparrow & \uparrow \\ 5 & 4 & 3 & 2 \end{array}$$

Answer:
$$5 \cdot 4 \cdot 3 \cdot 2 = 120$$

Answer: $2 \cdot 2 \cdot 5 \cdot 5 = 100$

Answer: $2 \cdot 1 \cdot 3 \cdot 2 = |12|$

(c) How many length-4 lists are there if repetition is allowed, and the first two entries are vowels?

(d) How many length-4 lists are there if repetition is **not** allowed, and the first two entries are vowels?

Name: _____ QUIZ 8 QUIZ 8 MATH 211 February 14, 2023

- 1. This problem concerns lists made from the five digits 1, 2, 3, 4, 5.
 - (a) How many length-4 lists are there if repetition is **not** allowed?

Answer:
$$5 \cdot 4 \cdot 3 \cdot 2 = \boxed{120}$$

(b) How many length-4 lists are there if repetition is allowed?

Answer:
$$5 \cdot 5 \cdot 5 \cdot 5 = 625$$

(c) How many length-4 lists are there if repetition is allowed, and the first two entries are odd?

$$\uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \\ 3 3 5 5$$

 $\begin{array}{c} \uparrow & \uparrow \\ 3 & 2 \end{array}$

4 3

5

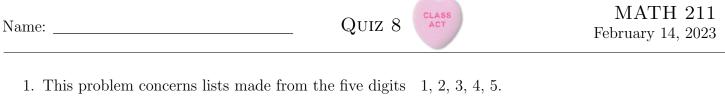
↑ 5

5 T

Answer: $3 \cdot 3 \cdot 5 \cdot 5 = |225|$

(d) How many length-4 lists are there if repetition is **not** allowed, and the first two entries odd?

Answer:
$$3 \cdot 2 \cdot 3 \cdot 2 = 36$$



 $\cdot 2 = |120|$

(a) How many length-4 lists are there if repetition is **not** allowed?

$$\uparrow$$
 \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow \uparrow 5 4 3 2

(b) How many length-4 lists are there if repetition is allowed?

Answer:
$$5 \cdot 5 \cdot 5 \cdot 5 = 625$$

Answer: $2 \cdot 2 \cdot 5 \cdot 5 = 100$

(c) How many length-4 lists are there if repetition is allowed, and the first two entries are even?

$$\begin{array}{c|c} & & \\ \hline \uparrow & \uparrow & \uparrow & \uparrow \\ 2 & 2 & 5 & 5 \end{array}$$

(d) How many length-4 lists are there if repetition is **not** allowed, and the first two entries even?

QUIZ 8

$$\uparrow \uparrow \uparrow \uparrow \uparrow \uparrow$$
$$2 1 3 2$$

Answer:
$$2 \cdot 1 \cdot 3 \cdot 2 = 12$$

Name:

MATH 211 February 14, 2023

- 1. This problem concerns lists made from the six symbols L, I, S, T, E, D.
 - (a) How many length-4 lists are there if repetition is allowed?

(b) How many length-4 lists are there if repetition is **not** allowed?

Answer:
$$6 \cdot 5 \cdot 4 \cdot 3 = 360$$

(c) How many length-4 lists are there if repetition is allowed, and the first two entries are vowels?

↑ 6

↑ 2

Answer:
$$2 \cdot 2 \cdot 6 \cdot 6 = 144$$

(d) How many length-4 lists are there if repetition is **not** allowed, and the first two entries are vowels?

Answer:
$$2 \cdot 1 \cdot 4 \cdot 3 = 24$$