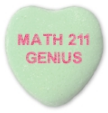
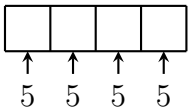
Name: _____ QUIZ 8 

MATH 211
February 14, 2023

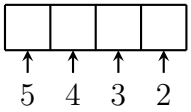
1. This problem concerns lists made from the five symbols C, O, U, N, T.

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

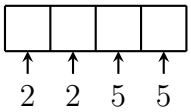
   Answer: $5 \cdot 5 \cdot 5 \cdot 5 = \boxed{\mathbf{625}}$

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

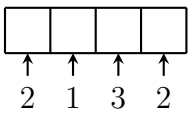
   Answer: $5 \cdot 4 \cdot 3 \cdot 2 = \boxed{\mathbf{120}}$

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

   Answer: $2 \cdot 2 \cdot 5 \cdot 5 = \boxed{\mathbf{100}}$

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

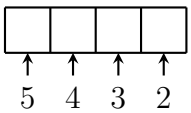
   Answer: $2 \cdot 1 \cdot 3 \cdot 2 = \boxed{\mathbf{12}}$

Name: _____ QUIZ 8 

MATH 211
February 14, 2023

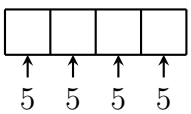
1. This problem concerns lists made from the five digits 1, 2, 3, 4, 5.

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

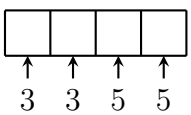
   Answer: $5 \cdot 4 \cdot 3 \cdot 2 = \boxed{\mathbf{120}}$

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

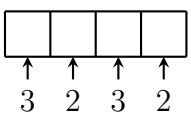
   Answer: $5 \cdot 5 \cdot 5 \cdot 5 = \boxed{\mathbf{625}}$

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

   Answer: $3 \cdot 3 \cdot 5 \cdot 5 = \boxed{\mathbf{225}}$

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

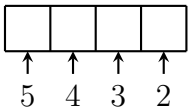
   Answer: $3 \cdot 2 \cdot 3 \cdot 2 = \boxed{\mathbf{36}}$

Name: _____ QUIZ 8 

MATH 211
February 14, 2023

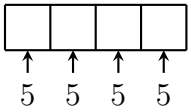
1. This problem concerns lists made from the five digits 1, 2, 3, 4, 5.

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

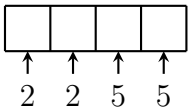
   Answer: $5 \cdot 4 \cdot 3 \cdot 2 = \boxed{\mathbf{120}}$

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

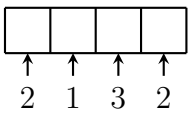
   Answer: $5 \cdot 5 \cdot 5 \cdot 5 = \boxed{\mathbf{625}}$

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

   Answer: $2 \cdot 2 \cdot 5 \cdot 5 = \boxed{\mathbf{100}}$

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

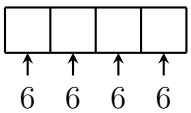
   Answer: $2 \cdot 1 \cdot 3 \cdot 2 = \boxed{\mathbf{12}}$

Name: _____ QUIZ 8 

MATH 211
February 14, 2023

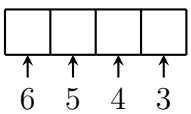
1. This problem concerns lists made from the six symbols L, I, S, T, E, D.

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

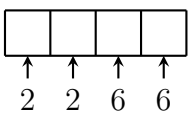
   Answer: $6 \cdot 6 \cdot 6 \cdot 6 = \boxed{\mathbf{1296}}$

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

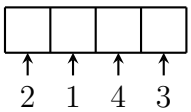
   Answer: $6 \cdot 5 \cdot 4 \cdot 3 = \boxed{\mathbf{360}}$

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

   Answer: $2 \cdot 2 \cdot 6 \cdot 6 = \boxed{\mathbf{144}}$

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

   Answer: $2 \cdot 1 \cdot 4 \cdot 3 = \boxed{\mathbf{24}}$