Math 112 - Quiz 9

November 10, 2016

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (2 points) Students in a literature class must choose a book to read and a movie to watch. They can choose from 9 different books and 7 different movies. How many different book/movie pairs are there?

$9 \times 7 = 63$

2. (4 points) The letters A, B, C, D, E, and F are used to form a 4-letter code.

   (a) How many possible codes are there if letters can be reused?

$6 \times 6 \times 6 \times 6 = 1296$

   (b) How many possible codes are there if letters cannot be reused?

$6 \times 5 \times 4 \times 3 = 360$

3. (2 points) Compute each of the following.

   (a) 6!

$6 \times 5 \times 4 \times 3 \times 2 = 720$

   (b) $\frac{100!}{98!} = 100 \times 99 = 9900$

4. (2 points) List two different permutations of the $(1, 2, 3, 4)$. How many different permutations are there?

$(4, 3, 2, 1)$

$(2, 1, 4, 3)$

There are $4! = 24$ permutations